New Schedule of Terms on Appliances & Commercial Refrigeration Announced

(Concluded from Page 1, Column 5)

minimum down payments for each appliance purchased, and that the maximum time limit shall be no longer than that of any single appliance included in the contract.

Underlying motive of the finance companies' move, the bulletin points out, is the conviction on their part and that of appliance manufacturers that the extremely low credit terms established to bring back sales during the depression are no longer necessary to maintain a steady sales volume.

Stimulating the action, however, are the recent resolutions calling for shorter terms passed by National Retail Credit Association, National Retail Dry Goods Association, and National Retail Furniture Association.

While experience of finance companies with long-term paper has been quite satisfactory, it is the belief that present improved trade conditions make it sound financial management to make their portfolios increasingly liquid as times become better, the bulletin states.

MADE BY ALL FIRMS

Revised standard rate charts issued by such companies as C.I.T. Corp., Commercial Credit Corp., General Motors Acceptance Corp., Redisco, and General Electric Contracts Corp. are modeled in general along the following schedule:

On self-contained air-conditioning units, the minimum down payment is set at 10%, with a maximum of 30 months in which to pay the balance; on commercial air-conditioning installations, including residences, when custom-built, down payment is 20%, maximum terms 24 months. Terms may be increased to 36 months, if the sale amounts to more than $2,500.

ON HOUSEHOLD BOXES

On individual sales of household refrigerators, electric and gas ranges, and electric and gas water heaters, the schedule calls for a minimum down payment of 10% or $5, whichever is the greater, with 30 months as the maximum time payment limit. Maximum installation expense financed is set at $5 for gas and $25 for electric ranges. Any excess amount is to be added to the down payment.

Other major household appliances, including washers, ironers, dishwashers, and space heaters, carrying a minimum down payment requirement of 10% or $5, and maximum terms are limited to 24 months.

COMMERCIAL TERMS

Commercial refrigeration installations are divided into two classifications, the first covering package merchandise and the second pertaining to goods of the non-package type. On package merchandise, where cost of installation does not exceed 5% of the cash selling price, terms are set at 10% down with a maximum of 24 months to pay.

Covered in this class are pressure or bottle type water coolers (when sold singly), beverage coolers, room coolers, display cases, milk coolers, and storage cabinets, where the compressor and equipment are self-contained units.

On non-package merchandise, where cost of installation exceeds 5% of the cash selling price, or where the compressor and equipment are not built as a self-contained unit, terms are 20% down and a time payment limit of 24 months. In all time payment sales of non-package commercial equipment, the down payment must equal the cost of installation.

QUANTITY SALES

Quantity sales of water coolers of the pressure or bottle type may be financed as long as 36 months, but the down payment must be equal to the amount of the monthly instalments called for under the contract.

Heating installations, including oil burners, boiler units, air-conditioning furnaces, house heating furnaces, gas conversion burners, stokers of all models, minimum is set at 5% or $25, whichever of the two is larger, with terms extending a maximum of 36 months.

Sales to apartment houses of electric refrigerators and other household electrical appliances may be extended over a period of 36 months, with down payment of 10% required.

Sales of radios, sun lamps, and vacuum cleaners require a down payment of 10% or a minimum of $5, with the financing period limited to 18 months.

COMBINATION RATES

Combination sales of appliances to individual purchasers carry special stipulations as to down payment and length of terms. In such cases, the minimum down payment must be equal to the combined minimum down payments required for each appliance.

Length of time the contract may run is determined by the longest term permissible on any one appliance included in the sale. That is, if a radio and refrigerator were sold on one contract, down payment must equal 10% of the cost of the two combined, and terms could be as long as 30 months, the limit on the refrigerator, which has the longest maturity period.

SOME EXCEPTIONS

While the above schedule applies in general with all major finance companies, some of them make individual exceptions. These include in one instance a requirement of at least $25 down on self-contained air conditioners, in another a 20% down payment on beverage and water cooler time-pay contracts.

Other variations were a requirement on the part of one company of a 10% down payment on oil burners, boiler units, and furnaces, and a limiting of space heater terms on the part of another to a maximum of 12 months, wherever possible.

AFL Members Break CIO Picket Lines to Open Mueller Plant

(Concluded from Page 1, Column 3)

Fred L. Riggin, Mueller president, closed the plant after last night's rioting.

Root of the current labor trouble at the Mueller plant, which manufactures fittings, tubing, valves, and other metal parts for refrigeration and air-conditioning equipment, is the bitter contest between CIO and AFL unions for jurisdiction over the plant's 1,200 workers.

The company recently announced its designation of the AFL unions—the Mueller Federal Union and the International Association of Machinists—as sole bargaining agents for the firm's non-clerical employes. This contract replaced a verbal agreement and is effective for one year. The AFL unions had previously submitted a notarized statement claiming 1,000 workers.

Howard Welch, organizer for CIO's International Union of Mine, Mill, and Smelter Workers, demanded an election. When this demand was refused, the strike was called.

President Riggin explained that he had previously promised his men a 5-cent hourly wage increase. He also said that he had met with CIO objectors and advised them to take up their election demand with the National Labor Relations Board, but was told it "would take too long."

Mr. Riggin declared that he had contacted Frank Bowen, regional NLRB director at Detroit, and that Mr. Bowen had vouched for the legality of the AFL contract.

Directs Clinic Plans

CARL BALLUS

* * *

'Fast Tempo' Promised At G-E's Clinic

(Concluded from Page 1, Column 1)

radio, small appliances, clocks, and unit kitchens. Advertising, sales promotion, and campaigns planned for 1938 also will be outlined.

The second day will be given over to general discussion of department and furniture store problems by department and furniture store executives. Ralph J. Cordiner, general manager of appliance sales for General Electric, will summarize the first day's program.

Tempo of this year's clinic, says Mr. Ballus, will be considerably faster than in years past. It will be worked out on the slogan of "Stop 'em, interest 'em, sell 'em." Presentations by division managers will be limited to five or 10 minutes, and presentation will be made from a movable-platform stage in Exposition Hall. As quickly as one product has been presented, another will be shifted to the spotlight.

Mr. Ballus has been connected with G-E sales activities for a number of years. After 13 years with the new business department of American Gas & Electric Co. in Scranton, Pa., and Canton, Ohio, he joined the Willis Co., a G-E distributor.

He was in charge of retail operations at Youngstown for several years, then of the retail organization of Electrical Housekeeping, Inc., Cleveland distributor, and later branch manager for General Electric Supply Corp. at Akron.

Dayton Group Plans Appliance Promotion

DAYTON—The Gas and Electric League of Dayton, with the cooperation of the Dayton Power & Light Co., is planning an extensive sales promotion campaign for electrical appliances, according to Brooks H. Harmon, League secretary.

K. Fitzpatrick, Jr., sales promotion manager of the utility, has outlined tentative plans for the campaign, including a letter-writing contest and a series of cooperative advertisements to be published in local newspapers. As a climax to the program, the league and the utility may cooperate with the home builders' show to be sponsored by the Construction League of Dayton next March or April.

John Tehan is chairman of the committee in charge of the drive.

MANHATTAN

V BELTS

Run smoothly . . . without noise . . . and last longer; repeated tests prove this.

The highly satisfactory service and life of these belts is due to the exclusive Manhattan construction: the endless Whipcord is completely floated in rubber, welded securely into a strong tension member which is placed in the neutral axis area. Above this an extensible section and below, a compression section. Result: internal heat reduced to a minimum.

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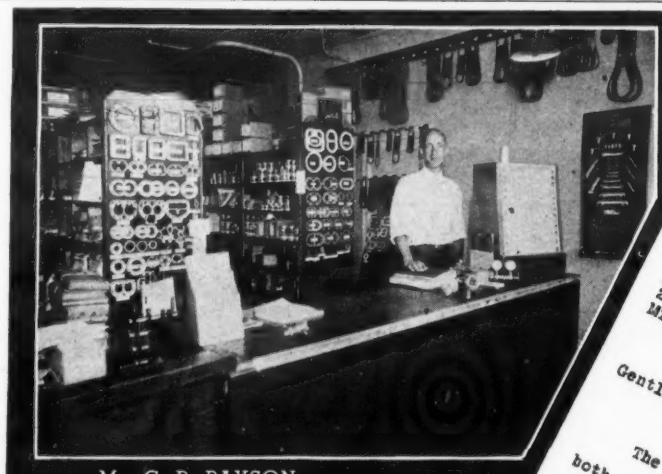

Mr. C. P. PAYSON

"AN INCREASING DEMAND for CONTROLS"

C. P. PAYSON COMPANY
REFRIGERATION AND OIL BURNER SUPPLIES
372 MAIN STREET
SPRINGFIELD, MASS.

Sept. 16, 1937

Automatic Products Co.
2450 North 32nd Street
Milwaukee, Wisconsin

Gentlemen:

The increasing demand for Automatic Products, both from old and new users, leads us to highly recommend these products for lasting and satisfactory service.

Very truly yours,
C. P. PAYSON COMPANY

CPP:D

Go to Your Jobber For Your Controls

Trained by vocation and education, Refrigeration Engineers and Supply Jobbers are quick to recognize Quality in any product that will add to their prestige, and work to the satisfaction and benefit of their customers.

For this reason, the constantly increasing popularity of A-P Expansion Valves and Solenoids among the "Experts" of the Industry is especially gratifying. To "Follow the Leaders" today means to specify A-P Controls on every Refrigeration and Air Conditioning installation.

It's A-P's Extra Value in Leakproof Dependability, in years of satisfactory trouble-free efficiency and accuracy, in certainty of operation under all conditions — that has won the confidence of Engineers, Service Men, and Refrigeration users.

Progressive Jobbers Everywhere Stock Controls.

No. 73RB Solenoid

No. 205 Expansion Valve

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2450 NORTH THIRTY — SECOND STREET
MILWAUKEE WISCONSIN

Thermo Valves
Expansion Valves
High Pressure Float Valves
Low Pressure Float Switches
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Send for the New
REFRIGERATION CATALOG
Seven Models of Compressors
Fifty-eight Models of High-sides from ¼ H. P. to 15 H. P.
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AIR CONDITIONING AND

WRITTEN TO BE READ ON ARRIVAL

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ACMA Executive Backs Plan to Limit Cooling

Cincinnati Ordinance to Hold Differential to 15° Endorsed

WASHINGTON, D. C. — Enactment of an ordinance in Cincinnati, limiting to 15 degrees the differential between the temperature of any air-conditioned building and the temperature outside, has been endorsed by William B. Henderson, executive vice president of the Air Conditioning Manufacturers' Association, as a wise and definite step to end misuse and incorrect operation of air-conditioning equipment.

"There is no reason for discomfort-causing differences of tempera-

(*Concluded on Page 2, Column 4*)

Gar Wood Offers New 1-Year Service Plan

DETROIT—A new pay-in-advance, one-year service arrangement for users of Gar Wood heating and air-conditioning equipment has been announced by the air-conditioning division of Gar Wood Industries, Inc.

According to William Ostergren,

(*Concluded on Page 2, Column 4*)

Revenue Collections in August Drop $168,550

WASHINGTON, D. C. — Internal revenue collections on mechanical refrigerators during the month of August totaled $895,323, a decline of $168,550 from the $1,063,873 collected during August of last year.

Penn Now Making Controls in Plant At Goshen, Ind.

GOSHEN, Ind.—Entire production facilities for manufacturing refrigeration and air-conditioning, oil burner, stoker, and gas heating controls of Penn Electric Switch Co. are now located in the company's new factory here.

Executive offices, research and development activities, and a portion of Penn's manufacturing were moved

(*Concluded on Page 2, Column 5*)

Parts Makers, Jobbers Plan Joint Banquet

CHICAGO, Oct. 5—Directors of the Refrigeration Supplies and Parts Manufacturers Association and members of the program committee were in session all day at the Palmer House making plans and arrangements for the annual meeting of the Association which will be held at the Stevens hotel in Chicago Tuesday and Wednesday, Nov. 2 and 3.

Robert Spangler, president of the Refrigeration Supply Jobbers Association attended part of the session for the purpose of coordinating the program of the jobbers who will have their annual meeting at the same place on Nov. 1 and 2. It was tentatively agreed that the manufacturers and jobbers will have a joint banquet Tuesday evening, Nov. 2.

Both meetings will be held in conjunction with the exhibition to be staged by the Refrigeration Service Engineers Society. The service men will meet Nov. 3, 4, and 5:

Among those who attended the manufacturer's meeting were: J. D.

(*Concluded on Page 28, Column 2*)

Gas Men Seek To Retain Top In Range Field

'Super-Range' Designed To Combat Electric Advances

CLEVELAND—A concerted drive upon the part of the gas industry to combat the admitted electrical-mindedness of modern housewives was urged by industry leaders at the annual convention of the American Gas Association held here last week.

Feature of this drive will be a new "super gas range" known as the Certified Economy Range. Announcement of this new range is scheduled for March 1, 1938.

It was evident from the gas association's meetings last week that

(*Concluded on Page 28, Column 3*)

Household Sales in August Set Record

DETROIT—Passing by 15,000 units the previous all-time high mark for the month, world sales of household electric refrigerators by manufacturers to distributors and dealers during August totaled 135,500 units, bringing the 1937 eight-months' total to 2,171,100 units, according to esti-

(*Concluded on Page 17, Column 5*)

Cutler-Hammer Sales Headed by Johnson

MILWAUKEE—Arnold R. Johnson, formerly manager of the Detroit office of Cutler-Hammer, Inc., manufacturer of motor control, safety, and meter switches, has been appointed manager of the company's merchandising sales division, in charge of distributor sales, reports G. S. Crane, vice president in charge of sales.

Mr. Johnson joined the Cutler-Hammer organization in 1917 as a member of the sales department. In 1924 he was transferred to the company's Chicago office, and moved to Detroit as manager of that sales office in 1928. He will be located at Cutler-Hammer headquarters here.

Frigidaire Appoints Range & Washer Division Chiefs

DAYTON—Six executive appointments in the Frigidaire division of General Motors Corp. were announced last week by E. G. Biechler, general manager.

Appointments include that J. M. Rushton as sales manager, electric range division; W. I. Buchanan, sales manager, electric washer division; E. A. Fisher, manager, household appliance engineering department; F. H. McCormick, chief engineer, electric range engineering department; and J. B. Dyer, chief engineer, electric washer and laundry equipment department.

Mr. Rushton and Mr. Buchanan will specialize on distribution of ranges and washers respectively, through the marketing channels of Frigidaire's household division.

Distribution and merchandising plans for the new products, upon which manufacturing processes have started at Frigidaire's Moraine City plant, will be announced soon.

Mr. Rushton was formerly manager of sales production and personnel for the Philadelphia Electric Co.

Appointed apartment house refrigerator salesman for Frigidaire at

(*Concluded on Page 8, Column 3*)

Randolph Is Hotpoint Vice President

CHICAGO—C. P. Randolph, for several years chief engineer of Edison General Electric Appliance Co., has been elected vice president of the company in charge of engineering.

Mr. Randolph's appointment is in

(*Concluded on Page 8, Column 4*)

Chicago Group To Ask RSES Price Sanction

Convention Resolutions To Seek Control Of Competition

CHICAGO—Two resolutions calling for price and distribution control, one directed to refrigerator manufacturers and the other directed to manufacturers and jobbers of refrigeration parts and supplies, will be presented for adoption at the convention of the Refrigeration Service Engineers' Society to be held in the Stevens hotel here Nov. 3 to 5.

The first resolution requests refrigeration manufacturers to maintain established resale prices on trademarked and advertised products and to restrict their sales to authorized dealers, in accord with the recently

(*Concluded on Page 28, Column 1*)

Air-Conditioned Trains Have Few Empty Seats

CHICAGO — Railway passenger traffic has been revived more through air conditioning than by any other one factor, according to Robert A. Kulp, engineer of maintenance for the Chicago & Northwestern Railroad.

"With the windows shut tight and streams of fresh air constantly flooding the spotless interiors of today's trains, passengers reach their destinations in perfect comfort and order," he said. "Introduction of air conditioning has compelled the construction of larger, more powerful, modern trains."

Courts Must Decide What Is a 'Minimum Price,' N.R.D.G.A. Counsel Says of Price Law

PHILADELPHIA — The bitter battle for and against price-fixing has not ended with the passage of the Miller-Tydings law, Irving C. Fox, counsel for the National Retail Dry Goods Association, told retailers here last week, predicting that the courts will be called upon to decide far-reaching issues in interpretation of the measure.

"Two decidedly important questions must eventually be determined by the courts," the Association counsel told members of the Philadelphia Chamber of Commerce at a luncheon meeting sponsored by the Merchants Committee at the Bellevue-Stratford. "These are—what is a 'minimum' price, and when are commodities in open competition with similar commodities of the same class."

The law permits producers of branded goods to fix "minimum" prices by contracts with retailers on their products in inter-state commerce to supplement so-called fair trade acts of states, Mr. Fox said, but such "minimum" price, he asserted emphatically, could not be construed to be "actual" price.

A manufacturer who states in his contract that the price is a "minimum" price, and then proceeds to make it absolutely impossible to sell the merchandise at a higher price than the price fixed is risking the penalties of the Sherman Act, the speaker warned.

The courts may also crack down on producers in the class of book publishers whose products are not in free and open competition with commodities of the same general class. Only on competitive commodities does the law permit the fixing of "minimum" prices, Mr. Fox declared.

"With what book is 'The Odyssey of an American Doctor' in competition?" he asked. "If I desire to read 'The Odyssey of an American Doctor,' and find the price too high, what book could I read which would take its place and which I could purchase in competition? The answer is

(*Concluded on Page 6, Column 1*)

Ittleson, C.I.T. Head, Gives Figures to Prove Instalment Selling Is Not Out of Hand

CHICAGO—The public has not yet gone too far into debt through the medium of instalment purchases, Henry Ittleson, president of Commercial Investment Trust Corp., last week told the annual meeting of the National Association of Sales Finance Companies at the Stevens hotel. He reported that finance companies have adopted a more conservative policy with respect to instalment credits.

Mr. Ittleson stated that on Dec. 31, 1936, a total of approximately two billion dollars of consumer instalment debt was outstanding. To counterbalance this sum, he said, were the following favorable facts:

1. This outstanding instalment debt is less than 3% of the estimated 1937 income of 70 billion dollars.

2. It is approximately 5% of the estimated 1937 retail sales of 40 billion dollars, so its maximum effect as a sales deterrent is limited to that percentage.

3. It is only about one fourth of the amount by which the 1937 national income paid out is estimated to exceed the 1936 income paid out.

4. The two billion dollar debt consisted of approximately 10 million separate notes. The unpaid balance, averaging about $200, consisted of notes "given in partial payment for some family purchase toward which every working member of the family normally contributes until the debt is liquidated."

Mr. Ittleson also pointed out that the ability of major appliance companies to weather the depression without serious setback and to reach their present excellent position had resulted from trial and error experience in instalment banking.

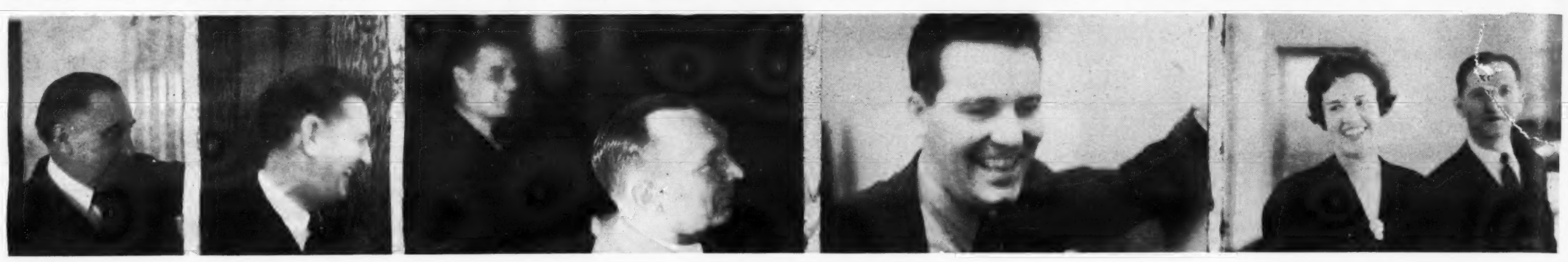
"The two factors that had been the basis for original credit served to reassure us that all was not lost as we entered the depression," Mr. Ittleson said. "These factors were our first hand knowledge of the honesty and integrity of the American public and its capacity to meet instalment obligations, and our knowledge that the average debt could be liquidated over a short period.

Manage Frigidaire Range & Washer Activities

(1) E. A. Fisher, manager, household appliance engineering department; (2) J. B. Dyer, chief engineer, electric washer and laundry equipment department; (3) W. I. Buchanan, sales manager, electric washer division; (4) E. H. McCormick, chief engineer, electric range engineering department; (5) J. M. Rushton, sales manager, electric range division of Frigidaire.

Blue Monday Is Just a Laugh to These Exuberant People

Bendix Home Laundry executives wore happy expressions throughout their recent distributors convention at South Bend, and provided good camera studies in glee and mirth. Top row: (1 and 2) President John Scott; (3) Vice President Judson Sayre; (4) Miss Gracey, official greeter; (5) President Willard French of Brooke, Smith & French advertising agency, presents the sole grave countenance as he ponders his added responsibilities. Bottom row: (1) Vincent Bendix, himself; (2) Verne Calkins, assistant sales manager; (3) William Leininger, advertising manager, at lower right; (4) John Chamberlain, inventor and impassioned orator; (5) Miss Gracey and Mr. Calkins.



INSULATED WITH CELOTEX

New Brunswick Beverage Cooler (Brunswick-Balke-Collender Co.) is fully insulated with Celotex

BRUNSWICK ENGINEERS SELECT CELOTEX

BRUNSWICK engineers wanted to be *sure* of *long service* and *low operating cost.* So they insulated this efficient new bottle cooler with Celotex, the low density refrigerator insulation that has *proved* its permanent effectiveness by years of service in thousands of refrigerators, bottle coolers, commercial cases and cold storage plants.

They *knew* that Celotex affords *unbroken insulation* in every corner—that it *stays put,* can't shift or settle to leave any part of the cabinet unprotected—and they knew, too, that Celotex adds strength. They appreciated its permanence—protected from dry rot, termites and fungus growth by the patented Ferox process (exclusive).

Another reason they specified Celotex was its *lower assembly cost.* It is available in special shapes and forms pre-fabricated to fit any cabinet designs . . . saves time and cost on the assembly line.

No wonder so many leading refrigerator manufacturers select Celotex. Maybe it offers a better and cost-cutting answer to your refrigerating or air-conditioning insulation problems. Why not write the Celotex refrigerator engineers today and find out?

CELOTEX
BRAND—INSULATING CANE BOARD
Reg. U. S. Pat. Off.
REFRIGERATION INSULATION
THE CELOTEX CORPORATION
919 North Michigan Avenue Chicago, Illinois
Sales Distributors Throughout the World

Henderson Backs Plan To Limit Cooling

(Concluded from Page 1, Column 1)

ture between outdoors and indoors in the case of air-conditioned structures," declared Mr. Henderson. "The degree of warmth or coolness inside the structure is directly under the control of the building engineer. Investigation almost always reveals that if there is an uncomfortably wide range between the two temperatures, it is because of an injudicious over-selling of the system's comfort features.

"The differential between the inside and outside temperatures never should exceed 15 to 18°, according to Dr. Irving S. Cutter, dean of the Northwestern University medical school in Chicago and widely quoted health authority.

"Giving a large office building as a particular example of well-regulated air conditioning, Doctor Cutter recently pointed out that the humidity and temperature are so controlled that there is no sense of discomfort. He added that physicians and nurses working in air-conditioned operating rooms in a Chicago hospital have never found the slightest difficulty and have nothing but praise for the added efficiency which the air-conditioning installation affords.

"The industry welcomes the Cincinnati ordinance as being an efficient means for correcting the erroneous operation of air-conditioning installations."

Pay-in-Advance Service Planned by Gar Wood

(Concluded from Page 1, Column 1)

service manager of the division, periodic inspections under the new service plan will free users from the necessity of remembering to have the unit checked, cleaned, and lubricated; will save the full cost of ordinary service calls; and will save needless wasting of fuel by prompt correction of faulty adjustments.

Penn Completes Move To Goshen Plant

(Concluded from Page 1, Column 2)

to the new location in July. Pump and air compressor controls will continue to be manufactured at the company's factory in Des Moines until early next year, according to M. E. Henning, executive vice president.

The new plant includes a two-story office building 42 x 118 ft. with penthouse recreation room, and a one-story monitor type factory building 210 x 340 ft. completely enclosed by continuous sash, insuring maximum daylight throughout the working area.

In a connecting building 20 x 90 ft. between factory and office, is housed the engineering section; immediately back of this is the experimental department.

This department is provided with the latest facilities for accurate testing of thermostatic controls and automatic switches under conditions duplicating field operation.

Equipped with a year-around air-conditioning system, the office building is of modern industrial design. Glass brick is used for stair lighting; architectural glass and processed wood paneling for decoration in vestibule and lobby; acoustical plaster in ceilings, and asphalt tile for floors.

Heating and cooling units have been installed throughout the factory area, and water used for summer cooling is pumped to the roof, where spray nozzles maintain a shower over the roof deck during the day to keep inside temperatures as low as possible.

A square building entrance tower with 35 ft. vertical shaft of glass brick provides contrast to a general exterior treatment which consists of horizontal bands of sash framed in brick work.

Factory working area is laid out straight line production. Materials are received and products shipped over a single two-car loading dock which connects by private siding with the main line of the New York Central railroad.

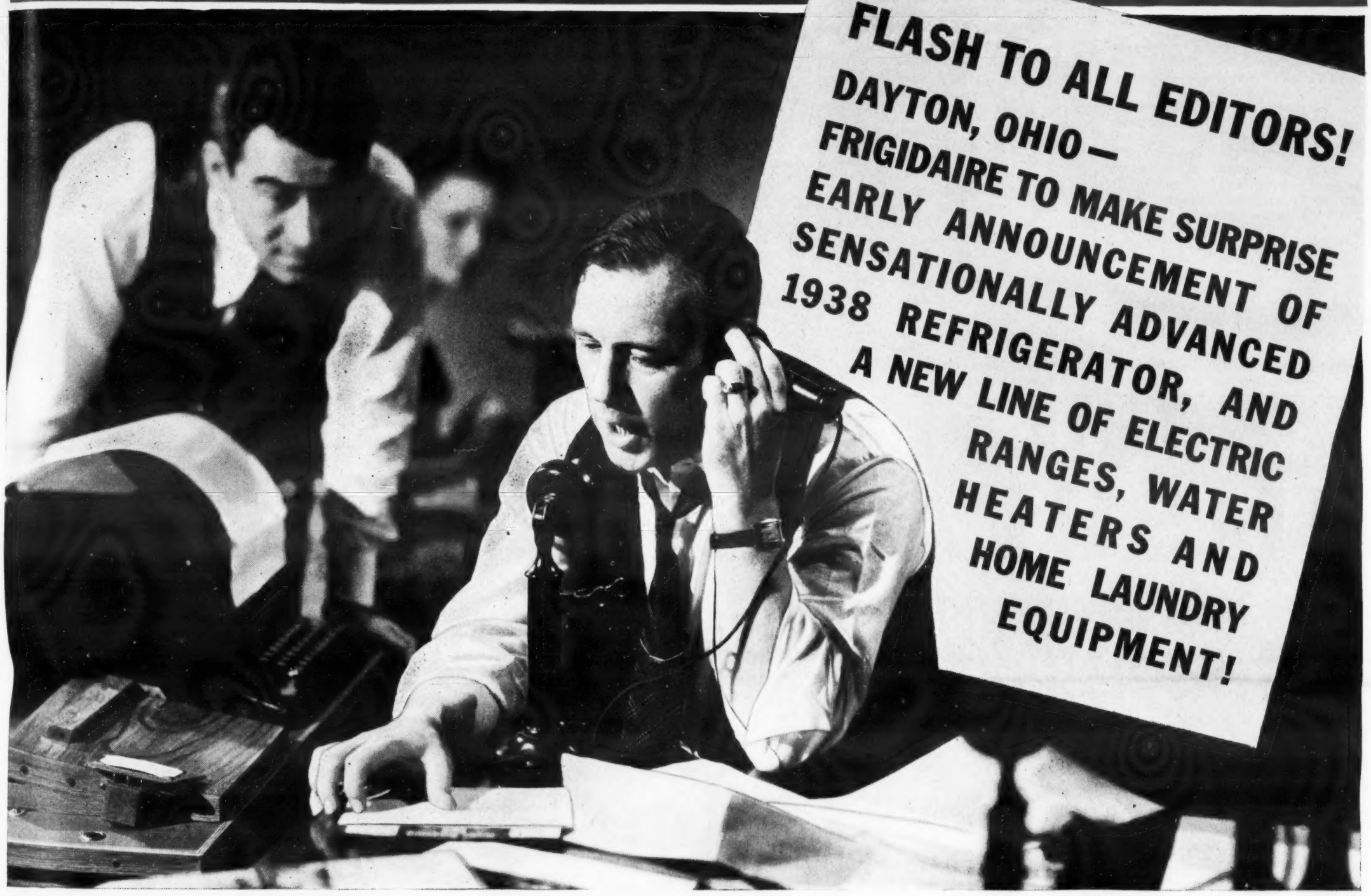
The Distributor Who Sells the
Copeland REFRIGERATION LINE

IS BUILDING GOOD-WILL FOR YEARS TO COME!

It is just good business foresight to sell your customers a quality-built Copeland product. Whether you sell a Copeland Household Refrigerator, Commercial Refrigeration, Washer or Ironer, you are wisely building up a backlog of long-time customer satisfaction that will pay you dividends in continued patronage for many years.

Write for Sales Plan
COPELAND REFRIGERATION CORPORATION
Holden Ave. at Lincoln — Detroit

HOLD EVERYTHING!



FRIGIDAIRE DEALERS TO GET HEAD START TOWARD BIGGER YEAR THAN EVER IN 1938!

● Frigidaire's about to make headline news again! Watch for the first details of the 1938 Frigidaire with sensationally advanced Meter-Miser, and scores of other new sales-clinching advantages! Get the details about the new Frigidaire appliances – ranges, washers, ironers, water heaters – that will give Frigidaire Dealers outstanding products in the major appliance field.

Thus, Frigidaire Dealers are about to get a head start toward a year bigger than ever before! The sales records they shattered in 1936 and 1937 will be smashed anew in 1938! For behind its new 1938 Frigidaire with the Meter-Miser – and behind each of its revolutionary new appliances – Frigidaire will put the same dynamic, compelling sales-strategy that has made Frigidaire the largest selling refrigerator! And back that strategy up with the heaviest, most concentrated advertising campaign in Frigidaire history! . . . So HOLD EVERYTHING for next month's big Frigidaire announcement. It's going to be another Frigidaire year – with new and greater selling opportunities in the major appliance field!

FRIGIDAIRE DIVISION
General Motors Sales Corporation · Dayton, Ohio

G M FRIGIDAIRE MADE ONLY BY GENERAL MOTORS

SPECIALTY SELLING IDEAS

G-E Offers $60,000 Prizes in Contest Promoting Building of Better Homes

CLEVELAND — An "Electrical Standard of Living" program, in which General Electric Co. is offering $60,000 in awards during the next year and a half, is being launched by utilities all over the country in an effort to induce people to build better homes and to use more electrical equipment.

The General Electric prizes will consists of cash awards to home builders and modernizers, scrip in $200 units that can be used for the purchase of home appliances, and two completely electrified homes, built to the winners' specifications.

The electrical standard of living program will consist of a number of local activities, each sponsored by an electric service company in its territory. Participation by the public will be of two kinds.

Those building or modernizing a home, work on which was started after Feb. 1, 1937, and which will be completed some time within the period of Aug. 15, 1937, and Oct. 31, 1938, will be invited to submit plans, specifications, and photographs to their local sponsor.

Submitted data will be judged by an impartial jury and rated according to the way plans realize the following 10 specifications: good location and architecture; sound construction and skilled labor; quality materials and equipment; landscaping and interior decorating; sound financing; new materials; insulation and sound deadening; heating and air conditioning; plumbing and sanitation; electrification.

General Electric will give 20 prizes of $1,000 each for the homes selected nationally which best meet the 10 specifications.

Second activity of the program, educational in objective, also will be sponsored locally by utility companies. Participants will be furnished with informative material detailing the features of complete home electrification, including kitchen treatment, scientific lighting, planned home wiring, heating and air conditioning, and will be invited to tell why electric living appeals to them.

The activity will spread over a 10-week period this year, from Sept. 27 to Dec. 4. Every week during the period General Electric will award 10 prizes of $200 each, and two homes at the end of the contest.

Non-Merchandising Kitchen Planning Activity Proves Its Worth to Boston Utility

BOSTON—Ten thousand dollars worth of additional business in six months; an added load of 1,461 kw., representing a yearly revenue of $11,562—that is the evidence offered by Boston Edison Co. in support of the theory that utility-operated kitchen planning services can be profitable enterprises.

The following picture of Boston Edison's kitchen planning operations is furnished by Henry B. Kane, of the utility's kitchen modernizing service.

Boston Edison Co. has some 300,000 domestic meters in an area of 740 sq. mi. comprising 39 towns and cities in addition to Boston proper. In July, 1936, the company set up a kitchen modernizing service in its promotion department, and since that time two men have devoted their full time to this work.

The services of this division have been rendered to dealers, real estate operators, speculative builders, apartment house owners, and home owners. The men in this division work in cooperation with the regular sales force. They make the survey, draw the plan, and, in company with the salesman, present it to the customer.

In the 10 months since they began operations they have planned 471 kitchens. In a six-month period last year they completed 182 plans, 95% of which resulted in sale of one or more major electric appliances. Only eight sales were lost to competitive equipment. Four complete kitchens were installed.

The utility has not found it necessary to engage in merchandising non-electrical equipment to make its kitchen modernizing plan a success, Mr. Kane says. It has found a planning and advisory service, in conjunction with the sale of electrical merchandise, to be sufficient.

This planning service has proven itself invaluable as a sales aid, he adds. Individualized plans such as this service provides enable the home owner to see just what his own kitchen would look like if it were remodeled in the modern manner.

If such a plan doesn't sell all the equipment at once, it may at least be the start of a step-by-step purchase plan because it has caused the owner to be dissatisfied with his present kitchen, Mr. Kane believes. This assumption is supported by the fact that 174 Boston Edison plans resulted in average sales of 1.75—nearly two—units of major electrical equipment.

Speculative builders also welcome such a service, the utility has found. The kitchen modernizing program was a major factor in the sale of electric ranges and refrigerators in 63% of the more than 1,400 new speculative homes erected in last year in the territory of Boston Edison Co.

It also has been effective in apartment house work, both new and remodeling. Even architects have shown themselves ready and willing to accept the help of a trained kitchen planner, although company salesmen had previously found them unapproachable, Mr. Kane declares.

3-Mo. Appliance Drive Launched by Rocky Mountain League

ESTES PARK, Colo.—Spurred by a $125,000 advertising campaign, a three-month "Electrical Jubilee" appliance merchandising drive covering Colorado, Wyoming, New Mexico, and South Dakota was launched by the Rocky Mountain Electrical League at a recent two-day meeting here.

J. H. Jacobucci, manager of Utah Power & Light Co. was elected president of the League to succeed Guy W. Faller, whose term expires Jan. 1.

Expected to secure $2,000,000 worth of electric appliance sales, the drive will elicit participation by 250 firms and 10,000 executives, according to League expectations.

Radio programs featured on all stations in the vicinity, expositions, shows, contests, personal letters, newspaper advertising and publicity, will stimulate interest in the Jubilee sale.

The League will award several expense-paid trips to the Rose Bowl football game in January to salesmen, merchandise managers, and appliance retailers who reach specified quotas during the drive.

Feature of the two-day meeting of League members was the council fire ceremonies emblematic of the Kee-Lo-Watt tribe, with officers attired in picturesque head-dress and Indian regalia.

Other officers elected at the meeting were: vice presidents—H. E. Samson, Southwestern Public Service Co.; Thomas W. Hughes, Sheridan County Electric Co.; John E. Loiseau, Public Service Co. of Colorado; and E. E. Brazier, General Electric Supply Corp.

W. E. Sterne, Arvada Electric Co., was re-elected treasurer, and George E. Lewis, executive secretary of the organization.

The reward of merit annually presented by the League went to John E. Loiseau, Public Service Co. of Colorado, for his work in consolidating the old Rocky Mountain Electrical Association with the Electrical League of Colorado to form the present organization.

Salesman's 'Goat'

Martin Reinhardt, manager of household sales for the George F. Dent Co., Kelvinator distributor in Bay City, Mich., is ready to turn over "Mortimer the Goat" to the salesman who had the worst record for the week.

* * *

Salesmen Hustle to Avoid Taking Care of 'Mortimer the Goat'

BAY CITY, Mich.—The way a salesman can "get his goat" most quickly in the George F. Dent Kelvinator distributorship is to bring in the lowest weekly quota for selling electric refrigerators.

Mr. Dent ran a six-week contest recently, during which each salesman was given a set quota. At the end of each week the salesmen reported on their percentage of quota, and the man with the lowest record was entrusted with the care of a goat named Mortimer.

Besides taking care of Mortimer for one week, the salesman was expected to wear a big button designating him as "Mortimer's Keeper."

The contest caused a big increase in sales and great deal of friendly competition, Mr. Dent says. Winner of the first contest prize was L. B. Rogers.

Other salesmen participating in the contest were: Marshall Hier, Martin Reinhardt, domestic sales manager, Jack Steele, G. D. Fisher, and R. B. Balkema, wholesale manager.

'Grunow Is in Town' Theme Song of Show Put on from Trailer

FORT WORTH, Tex.—A blue and silver trailer finished in colors used by the manufacturer is proving the best promotion method it has ever used to boost sales in smaller towns, reports T. C. Jones Co., Grunow distributor.

The trailer, stocked with a complete line of models, is driven into the town square on a heavy shopping day; the announcer uses a loud-speaker system to herald "Grunow is in town," and follows this with a phonograph record, tieing in the local dealer's name.

Sometimes a show using local talent is put on in front of the local Grunow dealer's store.

"Merchandise can be taken from door to door in small towns where there is no dealer representation."

The trailer has been particularly useful to dealers on trade days.

THIS BETTER

INSULATION

born in EUROPE . . . reared in

OWENS-ILLINOIS LABORATORIES

● In 1908, when a professor at the University of Prague discovered the insulating value of glass fibers in matted form, the most important chapter in the Book of Insulation was begun. During the intervening years exhaustive research, elaborate experimentation and practical experience have clearly demonstrated the superiority of glass fiber insulation.

When this company started to develop Fiberglas in 1932, a similar product was already being used extensively in Europe; but Owens-Illinois chose to conduct an entirely independent investigation and research. As a result of the different approach to problems of the manufacture and use of glass fiber products, Owens-Illinois processes and methods have supplanted those formerly used in various European countries.

Fiberglas Insulation, as perfected and manufactured by Owens-Illinois is thus given not merely nation-wide, but world-wide, acceptance—and that will be easy to understand when you analyze this list of major advantages of Fiberglas—the dependable, quality-controlled insulation:

1. High Insulating Value.
2. Extremely Low Moisture Absorption.
3. Freedom from Rotting.
4. Rodent-, Vermin- and Termite-Proof.
5. Freedom from Odors.
6. Non-absorption of Odors.
7. Fungus- and Bacteria-Proof.
8. Light Weight.
9. Non-inflammability.
10. Permanence.
11. Resistance to Acid.
12. Sound Absorption.
13. Resiliency and Flexibility.
14. Availability in Different Fiber Diameters and Lengths.
15. Availability in Different Densities.
16. Adaptability to Combination with Other Materials.

For detailed information about the use of Fiberglas Insulation in refrigerators and coolers, write Industrial and Structural Products Division, Owens-Illinois Glass Company, Toledo, Ohio.

The Owens-Illinois Glass Company also manufactures Insulux Glass Block and Dust-Stop Replacement-Type Air Filters in addition to Fiberglas Insulation for all types of industrial use.

OWENS-ILLINOIS Fiberglas

THE MODERN INSULATION

Anaconda Copper

REFRIGERATION TUBES

They Flare without cracking

THE AMERICAN BRASS CO.

FRENCH SMALL TUBE Branch

General Offices: Waterbury, Conn.

400 Attend Outing Of New England Air Conditioning Bureau

SWAMPSCOTT, Mass.—More than 400 members and guests attended the fourth annual outing of the New England Air Conditioning Bureau at the New Ocean House here Sept. 24. Sports contests, entertainment, a golf tournament, and a banquet made up the day's activities.

Guests present included Julius Daniels, president of the Air Conditioning Bureau; J. F. G. Miller, past president and director of Air Conditioning Manufacturers' Association; C. S. Boyden, president of American Society of Heating & Ventilating Engineers; Prof. James Holt, president of the Boston chapter of National Association of Practical Refrigerating Engineers.

J. E. Gould, president of Boston Oil Burner Associates; Rudolph Sommers, president of the Boston chapter of American Society of Refrigerating Engineers; M. D. Engle, past president of National Direct Heating Association; J. P. Moyer, director of university extension tours, Massachusetts Department of Education; Walter L. Fleisher, New York City consulting engineer.

F. A. Weisenbach, Philadelphia branch, York Ice Machinery Corp.; R. J. Thompson of Kinetic Chemicals, Inc.; C. H. P. Hotchkiss, editor of Heating & Ventilating magazine, New York City; and George Hayes, president of the Boston chapter of N.A.P.R.E. Miss Ann Phillips of Cambridge, Mass., only woman member of the Air Conditioning Bureau, also sat at the speakers' table.

Zurcher Heads Retail Sales For Hartford G-E Dealer

HARTFORD, Conn.—Orrin P. Kilbourn, president of Orkil Electric Co., General Electric dealership, has appointed Gus Zurcher, appliance salesman, as manager of the company's retail division.

Mr. Zurcher has been Connecticut's leading G-E appliance salesman for almost 10 years, and has consistently ranked among the top 10 in national sales contests, according to Mr. Kilbourn.

F-M Distributor in Dayton Moves to New Quarters

DAYTON—Appliances, Inc., Fairbanks-Morse distributor, has moved its Dayton headquarters from 130 North St. Clair St. to 436 East Fifth St., where an attractive showroom has been set up. Besides ample display space, the new location affords plenty of room for storage and warehouse purposes.

Clyde Graham, local manager, has announced the appointment of Earl Snyder as service manager for the Dayton division. Mr. Snyder was formerly connected with the York Supply Co. here.

Sigwalt Refrigerator Opens Branch Store in Elgin

ELGIN, Ill.—The Sigwalt Refrigeration Co., Kelvinator distributor for Northern Cook county, has opened a branch store at 102½ Spring St. here, with Eugene H. White as manager.

Mr. White previously was connected with the Commercial Electric Co., Delco-Frigidaire distributor in Joliet, Ill.

150 Dealers at Merchandise Mart in Madison, Wis.

MADISON, Wis.—A merchandise mart for 150 dealers and salesmen of the Madison territory was conducted by Westinghouse Electric Supply Co. of Milwaukee at the Hotel Loraine, Aug. 24 and 25, under the direction of Henry Czech, company division manager.

Neff Appointed Springfield's Kelvinator Distributor

SPRINGFIELD, Mass.—Neff Refrigeration Co., new Kelvinator distributorship, was opened at 457 State St. here recently.

$200 Cost of Operating Electrical Equipment In Kelvin Home

DETROIT—Two hundred dollars—that's the average annual operating cost of the electrical equipment in an up-to-date, moderately priced "all-electric" home, according to figures based on actual operating costs of a test group of 11 Detroit Kelvin homes.

Maintenance charges for the complete year-around air-conditioning system and hot water system, as well as electric current for lights, range, refrigerator, radio, laundry appliances, and other electrical equipment in each of the homes tested averaged less than $200 for the one-year test period.

E. L. Sylvester, director of the Kelvinator home movement for Nash-Kelvinator Corp., reported the results of the year's study of operating and maintenance costs.

Original cost of each of these homes was less than $10,000.

Bush Reports Best Sales in August

HARTFORD, Conn.—Bush Mfg. Co. here reports August the biggest month in its history in both sales and production of parts for the heating, refrigeration, and air-conditioning industries.

With good fall prospects for finned tubing sales, the company expects to show a 100% increase for 1937 over last year. A patent was recently obtained on a new type of finned service for air conditioning.

Interstate Electric Opens Five Retail Branches

NEW ORLEANS—Interstate Electric Co., Crosley distributor, has opened several new Dixie Auto-Lec Stores, retail outlets which it controls, in preparation for the fall and winter season. Stores recently have been opened in Opelousas, Bogalusa, Hammond, and Houma, La., and in Gulfport, Miss.

Westinghouse Dealers Of Indiana Meet to Discuss Problems

LAFAYETTE, Ind. — Cementing the forces of 20 dealers here and providing a clearing house for ideas and a forum where sales practice problems are settled is The Westinghouse Dealers Association of Northern Indiana.

Formed after a Westinghouse district meeting four years ago, and put into operation by the dealers themselves, the association meets once a month, each dealer being host at his store successively. Membership include dealers at Peru on the north, Marion on the east, Lebanon in the south, and Fowler on the west.

Picking the next meeting place and determining which subject shall be covered is part of the program at the dutch treat dinner held before each meeting.

Typical program was that held recently in which two salesmen from the Indiana General Service Co. talked on electric ranges. Most dealers in the association have not done much range merchandising. The salesmen, Wayne Cleveland and Dave Van Vorhees, had as authoritative background their company's record of 15% electric range saturation.

Servicing and service problems were given major consideration at another meeting. The May meeting was waived for a trip to the Westinghouse factory at Mansfield.

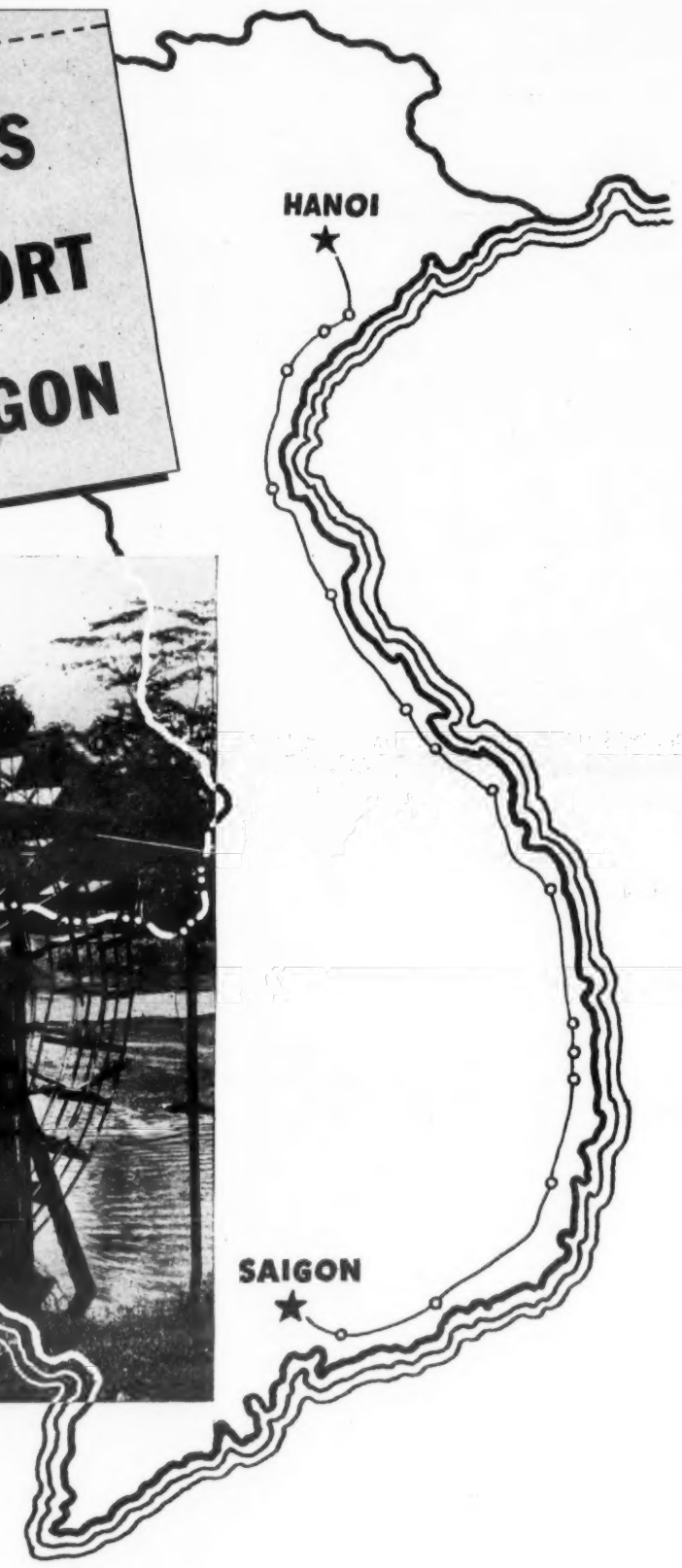
Among the meetings of last year was one at which member-dealers' salesmen conducted a selling clinic.

"Chief advantage of the association," claims C. B. Gildersleeve of The Foster Shop here, president of the organization, "is that we have an invaluable clearing house of ideas."

"Another big advantage is the opportunity provided for getting to know our neighboring Westinghouse dealers," declared H. L. Briggs, of Briggs-Barrett, Logansport, Ind. "We are able to cooperate in everyday selling, as well as in sticking together on prices and sales practices."

HANOI & SAI

NOW RAILWAY PASSENGERS WILL RIDE IN *Cool* COMFORT BETWEEN HANOI AND SAIGON



French Indo-China Railway to air condition 22 cars with "Freon" refrigerants*

EVEN in the far parts of the world, "Freon" fluorine refrigerants are used in air conditioning systems—providing maximum safety in office buildings in Shanghai, in gold mines in Africa, now on railroads in French Indo-China, where Carrier Engineering Corporation will air condition 22 passenger cars. Wherever human life and property require protection, "Freon" refrigerants are used.

It is natural and significant that "Freon 12" is the refrigerant almost exclusively used on mechanically cooled railway trains. For "Freon" refrigerants are non-flammable and non-explosive, non-poisonous, and odorless when mixed with air up to 20% by volume. They have no harmful effects on foods, clothes, furs or flowers.

"Freon" refrigerants have been tested by the U. S. Bureau of Mines and meet all the specifications set by the Underwriters' Laboratories of Chicago in their recent report "Standard for Commercial Refrigerating Systems" (Subject No. 207).

"Freon" refrigerants are today providing air conditioning in schools, hospitals, theatres, offices and homes; in restaurants, in ships and submarines; in mines deep underground; in factories, stores and hotels—in every type of installation, large or small.

Be sure to specify "Freon" refrigerants for your air conditioning system.

KINETIC

*"Freon" is Kinetic's registered trade mark for its fluorine refrigerants

FREON
REG. U. S. PAT. OFF.
safe refrigerants

KINETIC CHEMICALS, INC., TENTH AND MARKET STREETS, WILMINGTON, DELAWARE

Authorities Point Out Price Law Problems and Dangers

Retailers' Counsel Cites Problems Involved In Setting Up Minimum Price Schedules

(Concluded from Page 1, Column 2)

obviously 'no book.' There is question as to whether a dual monopoly may legally be set up in a book under the provisions of these acts—first, the protection and monopoly effected by copyright and then of control of the price from publisher to consumer by means of contracts.

"If this is permitted, what is the significance of the "minimum price" provision of these laws? Practically every book published is stamped with a retail price of $2, $2.50, or $3, or whatever it may be. How could this be considered as a minimum price?

If manufacturers desire to avail themselves of the law to set "minimum prices," a drastic revision of many of their present advertising methods and other practices will first be necessary to avoid charges that they are not complying with the law but instead fixing "actual" prices, according to the speaker.

As an example, Mr. Fox pointed to the case of a safety razor manufacturer who advertises a certain razor to retail at 49 cents, and supplies display cards, stands, etc., on which the price is prominently displayed.

"After giving such wide publicity to the price at which this razor is to be sold, can this manufacturer enter into a contract under the amended Sherman Act and merely by stipulating in this contract that 49 cents is the minimum price, evade the provisions of the Act, he having by his own practices made it absolutely impossible for anyone to sell that razor at a lower price than 49 cents?"

Still another obstacle was seen by Mr. Fox in the fact that of the 42 states with fair-trade laws, only 26 qualify under the Tydings law by limiting the resale prices to a "minimum" and not an actual price.

"The pertinent question arises," he declared, "as to whether or not it will be possible to comply with the Federal law by the simple means of providing in any contract that the resale price fixed by the producer is the minimum resale price at which the merchandise is to be sold, even though the price fixed is the actual selling price which has been fixed for the sales of the merchandise in those states which permit the fixing of the actual resale price. Will it be possible to fix an actual price in one state and call the same price minimum price in another state."

Marketing Expert Interprets Fair Trade Legislation Now Effective in Various States

BOSTON—Defining the term "Fair Trade Act" as designating a law which permits manufacturers through contracts with purchasers, to control resale prices of identified articles, provided they are in fair and open competition with commodities of the same general class, Edmund P. Learned, associate professor of marketing, Harvard University, discussed effects of Fair Trade legislation on distribution at the Ninth Boston Conference on Distribution held here Sept. 20.

"The United States Supreme Court's decision on the Illinois and California Fair Trade Acts upheld the right of states to pass such laws even when they provided that contracts between a manufacturer and one party are binding on a third party, not a party to the contract," he declared.

"The third party is guilty of an unfair trade practice and subject to claims for damage when he wilfully and knowingly advertises, offers for sale, or sells a commodity at less than the price stipulated in any contract made by the manufacturer. The court held that a producer of an identified article offers both a commodity and the goodwill that attaches to its mark or name.

"The product itself he sells, but not the goodwill of the brand name. He is entitled to protect the goodwill, if he wishes, by restricting the price at which the merchandise may be resold. The court further held that a buyer might sell the commodity at his own price provided he removed the identification and made no verbal or other reference to the source of the merchandise."

Contracts made under such laws, Prof. Learned said, were safely legal only for parties engaged in intrastate trade. The recent passage by Congress and the reluctant approval by the President of the Tydings-Miller Bill, he added, now legalizes resale price maintenance contracts made between firms in different states when such contracts are lawful in intrastate transactions.

"In an economic sense the fair trade laws are part of a broader movement to formulate rules of trade practice. For example: the attempts to formulate trade practice rules under the N.R.A., the trade practice conference under the supervision of the Federal Trade Commission, the Robinson-Patman Law, and the state laws forbidding sales below cost," stated Prof. Learned.

"This latter type may be considered as an alternative to the resale price maintenance contract as a way of handling so-called loss-leader selling."

Laws prohibiting sales below cost, commonly referred to as unfair trade laws, affect items of merchandise that may not be within the practical scope of fair trade acts. The cost below which the merchant is not supposed to sell is defined in the California Unfair Practices Act as invoice cost or replacement cost, whichever is the lower, plus all the costs of doing business, such as labor and executive salaries, rent, interest on borrowed money, depreciation, selling cost, maintenance of equipment, delivery cost, credit losses, all types of licenses, taxes, insurance, and advertising.

Prof. Learned next discussed the effect on distribution of fair trade legislation from the point of view of the consuming public. Consumers are not likely to be concerned about the economic arguments for or against resale price maintenance, he said, but they can understand the effect on their pocketbooks of whatever action on prices is taken by manufacturers and retailers.

"If resale prices are set substantially above pre-contract levels, the consumer will turn to uncontrolled, advertised brands of manufacturers or to the private brands of distributors. The public as a whole, however, probably will not rush to abandon well-known brands, and the gradual substitution of distributor brands in many cases will be a slow costly process. Because of the almost daily advances in prices of commodities, the consumer is likely to accept slight advances in advertised goods when resale contracts are issued.

"Manufacturers and retailers should not assume that these laws give them a license to set prices and margins at any level they please. It would be bad politics to adopt a high-handed attitude, and what is more important, it would be bad business. Numerous manufacturers do not want to increase the pre-contract spread between prices of their products and those of well-established brands of distributors for fear of losing sales.

"Manufacturers cannot expect the retailers to bear all the burden of keeping a product competitive. In many cases manufacturers have held a price umbrella under which distributor brands have been allowed to flourish. Should not such companies reduce their own prices in order to preserve their market position?"

Without analysing the effects of resale price maintenance and the consequent loss of one form of price appeal on the several types of retail institutions, Prof. Learned enumerated a few of the possibilities.

"Department stores as a class have little to fear because such a small percentage of their sales is in standardized, advertised lines," he said. "Many department stores can use their established brands as price leaders; sales of these may increase.

"The chain stores are not likely to be seriously affected. They have good locations typically and should be able to hold sales of controlled items and in addition, for the price conscious consumer, they have their own well-established brands. British experience, moreover, shows that chain stores have prospered under resale price maintenance.

"Mail order houses do not appear to be frightened by the laws. In vigorous editorial policies they assail the new statutes and tell customers how prices are fixed. It is clear that they sense an opportunity to promote the values represented in their own lines and for that reason and the additional fact that agricultural income is increasing, the sales of the mail order companies should increase. The mail order companies, like department stores and some chains, have their own brands.

"So far the groceries and food industry have largely resisted what slight pressure there has been for the issuance of contracts. Until recently it was deterred by the illegality of such contracts in interstate trade. The real reasons, however, go deeper; they include the problems of how to enforce such contracts among from 100,000 to approximately 400,000 outlets, and also how to meet competition from distributor and chain store brands."

Commenting on how the independents, the chains, and the supermarkets would be affected if contracts should be issued in this field, he said:

"The independents ought to hold their own unless manufacturers set prices too high. Consumers who are accustomed to buying from chains are not likely to break this buying habit quickly. Both types of institutions would be protected from the inroads of new outlets that seek an initial foothold by price cuts on manufacturers' brands.

"The Model Law of the grocery industry protects the public better than the California statute," said Prof. Learned. "The Model Law proposes a mark-up of less than the cost of the most efficient retailer, whereas the California law is based on the total cost of distribution. Both laws of course provide for the disposal of obsolescent merchandise at below cost and they permit merchants to meet competitive prices on comparable articles.

"The public should resist laws that specify the total cost of distribution. From a business standpoint, they are unworkable except as loose interpretations are given to the words of the law. If the law means that the cost of individual items shall be used, it places an impossible burden on accountants of stores handling hundreds of items.

"If one believed that item costs could be determined, it does not follow that the public would buy at prices based on such costs. The same assertion is applicable if the average cost of doing business is used. The chief difficulty with the cost doctrine is that it gives no real weight to the demand side of the price equation."

The Factors Involved in Price Maintenance by Law

What about price maintenance under State Fair Trade Acts? What are the possibilities, and what are the problems involved?

On this page are the findings and opinions of two authorities who have studied the situation.

An 8-page booklet digesting the Fair Trade Acts now in effect in 41 states and giving the status of such legislation in seven other states has been prepared by Business News Publishing Co., 5229 Cass Ave., Detroit. Single copies are available for 25 cents each; 10 copies, $1.00; 100 copies, $5.00; and 1,000 copies, $25.00.

HOW WILL THE FINISH ON YOUR LINE RESIST THE ATTACK OF *Rust?*

THIS is a vital question to the people who buy and use the equipment you sell. Will it retain its fine appearance throughout a normal period of usefulness? Or will moisture soon set up corrosion—destroying beauty and efficiency?

Do you know just what protection from rust means in extra service? Parker chemists have tested thousands of products for this very purpose. They have checked and compared and pointed the way to greatly increased finish effectiveness for hundreds of manufacturers.

Parker technicians serve industry with the most comprehensive experience in corrosion problems and finish utility. Through them industry has learned the increased quality that can be expected with Parker Processes included in the finishing system. Make sure that the finishes on the things you make or sell are protected from rust. Then tell the customer why he can expect a greater measure of utility and satisfaction from the Parker Processed product.

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Ask for these Books:

For more than 22 years, this company has devoted its entire time, talent and energy to the improvement of rust-proofing methods. New books describing the Parker Processes are available to manufacturers and technical men. Send for your copies.

PARKER *Processes* CONQUER RUST
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Bureau of Standards Issues Color List

WASHINGTON, D. C.—The National Bureau of Standards has issued a list of six colors on which the industry has standardized for use in kitchen accessories, to assist purchasers in securing a satisfactory color match between articles bought for use in kitchens, where color harmony is essential to pleasing appearance.

The commercial standard establishes certain colors, having the greatest general acceptance, as standard, and provides means of reference whereby manufacturers can produce and store buyers can stock accessories which will match other items which the housewife has purchased previously.

The six colors adopted as standard for kitchen accessories are white, kitchen green, ivory, delphinium blue, royal blue, and red.

Movement for color standards for kitchen accessories was instigated by the National Retail Dry Goods Association in April, 1937, and the six standard colors were adopted at a later conference of manufacturers, distributors, and users. The standard is effective for new production from Jan. 1, 1938.

Products Exhibit Date Set for Nov. 17, 18

CHICAGO—Ninth Annual Products Exposition of the Purchasing Agents Association of Chicago will be held at the Hotel Sherman here, Wednesday and Thursday, Nov. 17 and 18.

More than 125 exhibits will be on display, and members of the association and advertisers will display new products, equipment, and methods for superintendents, engineers, foremen and production men, and for industrial buyers.

The program includes a luncheon meeting Nov. 17 at which speakers will discuss purchasing problems, and the annual banquet on Nov. 18.

Anchor Lite Co. Named Eureka Distributor

PITTSBURGH—Anchor Lite Appliance Co., Crosley distributor, has been appointed distributor in northern West Virginia, eastern Ohio, and western Pennsylvania for Eureka gas and coal ranges, and circulating heaters, according to Harold W Goldstein, general manager. The company is maintaining a display of the new line in its Pittsburgh showrooms.

Schaefer Advertising Head For Detroit Frigidaire

DETROIT—Paul Schaefer has been appointed advertising and sales promotion manager of the Detroit branch of the Frigidaire division of General Motors Sales Corp., succeeding R. D. Bielby, who has been named a district sales representative. Mr. Schaefer formerly was buyer for the appliance department of Peoples Outfitting Co.

Commercial Credit Issues Booklet on Credit

BALTIMORE—Commercial Credit Co. has just issued a 30-page booklet titled "Credit and Finance Today." The prospectus explains the types of credit offered, and the company's resources.

Smith Heads Kelvinator's Washington Office

WASHINGTON, D. C.—Garland Smith has been appointed manager of the Government sales office of the Kelvinator division of Nash-Kelvinator Corp. Mr. Smith's headquarters are at 1022 15th St. N. W.

Harold Davis Handles F-M in New Jackson, Miss. Store

JACKSON, Miss.—Harold Davis has opened an appliance store at 848 W. Capitol, in the Poindexter Park business section. Fairbanks-Morse refrigerators are included in his line of appliances.

EH&FA Signs Contracts With 5 Utilities

WASHINGTON, D. C.—Electric Home & Farm Authority has closed contracts with five more utilities providing for cooperative financing of electrical appliances sold to consumers located on the power lines of these utilities.

Utilities with which these agreements have been made are: Lancaster County Rural Public Power District, Lincoln, Neb.; Planters Electric Membership Corp., Waynesboro, Ga.; Wayne-White Counties Electric Cooperative, Fairfield, Ill.; Walton Electrical Association, Monroe, Ga.; City Water & Light Department, Hastings, Neb.

Ohio Dealer Sells 19 Units In His First 3 Months

ST. MARY'S, Ohio—Appointed a dealer in late May, Frank Gilmore sold 19 Westinghouse electric refrigerators during his first three months in business in this town of 5,000 people.

Westinghouse Names R. Davis Assistant Advertising Head

MANSFIELD—R. R. Davis, formerly apparatus advertising manager of Westinghouse Electric & Mfg. Co., has been appointed assistant to S. D. Mahan, general advertising manager of the company.

Mr. Davis has been associated with Westinghouse advertising activities since 1910. His offices will be in the East Pittsburgh works for the present, although he will be located in the company's new Pittsburgh headquarters as soon as advertising offices can be established there.

G-E Declares 40-Cent Dividend

NEW YORK CITY—A dividend of 40 cents per share for the third quarter, payable Oct. 25 to stockholders of record on Sept. 24, 1937, was declared by the board of directors of the General Electric Co. at its meeting here Sept. 10.

Crider Vice President Of Cooper-Louisville

LOUISVILLE, Ky. — John J. Crider, associated with Cooper-Louisville Co. for the past eight years as special sales representative for Crosley products in the Bluegrass district of Kentucky, has been elected vice president and director of the firm.

Mr. Crider will continue with his sales and promotion work in his present territory, despite his advancement.

East St. Louis Dealer Sells 200 Units in 8 Months

EAST ST. LOUIS—Union House Furnishing Co., Spartan electric refrigerator and radio dealer, sold and installed more than 200 electric refrigerators during the first eight months of this year, reports Harry Lasky, manager.

Increased purchasing power in the city's steel and railroad centers has been the biggest factor in stepping up business, Mr. Lasky says.

300 Michigan Dealers Attend F-M Meeting

GRAND RAPIDS, Mich. — The Dygert Distributing Co., which recently succeeded Lee M. Dygert, Inc., as appliance distributors in this territory, was host to 300 western Michigan dealers at a "speechless" sales convention Sept. 15-17. Fairbanks-Morse refrigerators, radios, washing machines and ironers were featured.

Faith Richards, F-M home economist, conducted training classes for home-service employes of dealers during the sales convention.

Graybar to Distribute Hotpoint in Alabama

BIRMINGHAM, Ala. — Graybar Electric Co.'s local branch has been appointed wholesale distributor for all Hotpoint major appliances in Alabama, according to an announcement made recently by R. W. Turnbull, vice president of Edison General Electric Appliance Co., Chicago.

This MAN'S

TRAINING IS ENDORSED BY MORE THAN 70 LEADING MANUFACTURERS IN THE FIELD OF REFRIGERATION AND AIR CONDITIONING

Number 2.

- HE IS A New Type of Craftsman - THE REFRIGERATION & AIR CONDITIONING INSTITUTE'S CONTRIBUTION TO THIS INDUSTRY . .

Yes—a New Type of Craftsman has been created—created especially for the Air Conditioning industry; and according to the Industry's own specifications. He is not a plumber, steamfitter, sheet metal worker, or electrician—but in a way he is a composite of all the crafts embodied in present air conditioning work, because he knows every phase of heating, ventilating, and cooling—knows it from the practical as well as the theoretical side. He has spent over a year IN STUDYING, and four solid weeks in our Shops, IN DOING,—installation, servicing and repairs,—and has worked on practically every type of equipment in use today.

Foremost in his long list of qualifications is the fact that at considerable personal sacrifice in time and money,—and over a long period of time,—he has satisfactorily completed every step of what is, we honestly believe, the most rigid Training Program ever set down by any Industry.

Before he was admitted for Training by the Institute he had to satisfy us, through careful investigation, that he was a man of high character, ambitious, a hard worker, mechanically inclined, and of a good education; also that he was a man who could be depended upon to be a loyal and trustworthy employee.

Under the supervision of some of the Industry's best engineers, he has been trained, by us, to step in where the Application Engineer leaves off, and make work what that Engineer has installed.

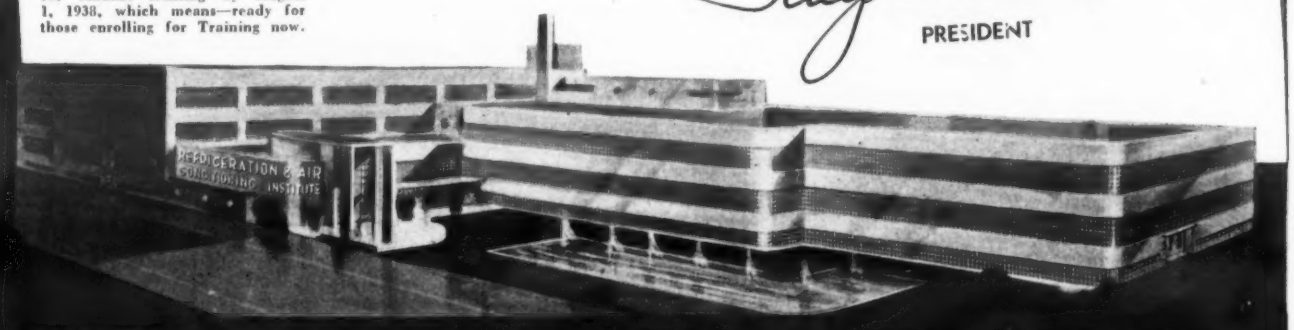
The record of every man trained by the Institute,—including his photograph, our rating of his ability, what his references had to say about him,—in fact, everything that you as an employer would like to know,—is available upon request—without obligation. They should be good men to build on.

Remember! More than 70 leading manufacturers in the refrigeration and air conditioning field are "officially" endorsing and recommending the Training Program that is making this new type of Craftsman possible. And some of these manufacturers have even gone so far as to appoint some of their best engineers and executives to a Board of Governors whose duty it is to see that the Training offered by the Institute meets the Industry's every need; and that men taking this Training are trained exactly as the Industry wants them trained.

If you do not have a copy of the Institute's "Report to the Industry"—a 200 page, cloth bound book with 15 big photographs—please ask for it on your letterhead.

Below is the Institute's new $300,000.00 Laboratory and Shops, made necessary by the increasing demand for R-A-C-I Trained men. It is expected that this new building will be available for student training by August 1, 1938, which means—ready for those enrolling for Training now.

Ray A. Smith
PRESIDENT



REFRIGERATION & AIR CONDITIONING INSTITUTE
2130-2158 LAWRENCE AVENUE . . . . . CHICAGO, ILL.

MAJOR APPLIANCES

Business Reply Cards Used to Promote Sales Of 3 Appliances by G-E Salesman

NEWPORT, Ky.—Canvassing professional men in his sales territory by a series of three business reply cards is the method which Elwood Hesch of Brocksmidt's General Electric dealership here, uses to promote range, dishwasher, and Disposall unit sales.

Directed to doctors, dentists, and lawyers, a series of cards, each listing the advantages of the appliance featured under a general question "Do You Know?" are mailed at 10-day intervals. Attached is a prepaid return card for the recipient who wishes additional information.

First of the series, headed "Another Step Forward to Better Living," lists the outstanding features of cooking with a G-E range. Ten days later the dishwasher mailing piece, which uses as an approach the statement, "A Permanent Vacation From a Disagreeable Job," is mailed.

Final piece in the series, which stresses the outstanding advantages of owning a G-E Disposall unit, is headed "Away With the Garbage Can Forever."

Personal follow-up calls are the next step in Mr. Hesch's campaign. At the first call the salesman will leave promotional literature and make arrangements to call back.

Front running salesmen have been quick to cash in on the 10-second demonstration of the Magic Finish Patented* Contour Presto Tray. In a flash, it's out of the freezing compartment, because Presto Tray's Magic Finish does not stick. Then a slight pressure on its patented contour pops out a rubber gridful of ice cubes . . . instantly, ready for use . . . one or a dozen *as* (*and when*) you need them.

A Straight Course to Smooth Sales!

THE MAGIC FINISH PATENTED CONTOUR
Presto Tray
WITH RUBBER GRID
★
ICE CUBES IN 10 SECONDS
*Patent Pending

It takes *more than talk* about high-speed freezing and split second release to get the nod of approval from today's refrigerator buyers . . . and Presto Tray steers a straight course to smooth sales. That's why leading salesmen demonstrate the utter simplicity with which the Magic Finish Presto Tray of Patented Contour gives ice cubes instantly . . . full-sized, cold and dry *without* melted or wasted cubes. For easier sales, insist that your refrigerators come factory equipped with Presto Tray—and give your customers all the advantages of a fast freezing metal tray plus all the conveniences of a rubber grid.

INLAND MFG. DIVISION
General Motors Corporation, Dayton, Ohio

Frigidaire Appoints Heads of Washer & Range Divisions

(Concluded from Page 1, Column 4)

Detroit in 1927, Mr. Buchanan was promoted to household sales supervisor, apartment house division sales manager, general representative for the department store division working out of Frigidaire's main office, and metropolitan sales manager for Chicago, which position he leaves to assume his new duties.

The appliance engineering division, headed by Mr. Fisher, has been functioning for some time in development and research work with a staff of technicians.

Mr. Fisher has been with Frigidaire and its predecessor companies for 21 years, working up from a clerk in the purchasing department to ice cream cabinet sales manager, Providence, R. I., branch manager, assistant treasurer, and budget director.

Before joining Frigidaire, Mr. McCormick was assistant chief engineer of Edison General Electric Appliance Co. He began his manufacturing career with General Electric at Pittsfield, Mass., following employment by the Washington Water Power Co. in Spokane, where he first worked after being graduated from Washington State college.

As engineer and assistant chief engineer for Edison General Electric Appliance, Mr. McCormick had direct charge of design of all Hotpoint and General Electric ranges and water heaters from 1922 to 1935, when he moved to Dayton.

Mr. Dyer has been active in the electrical industry since he was graduated from Ohio university in 1906. He was a mechanical and electrical engineer with Westinghouse Electric & Mfg. Co., at East Pittsburgh, Pa. for five years. He was an engineer with the Wagner Electric Co. at St. Louis for 10 years, and served in various electrical engineering capacities with General Motors Corp. for 10 years prior to becoming associated with Frigidaire more than a year ago.

Florida Power Co. Plans 40 Electric Kitchens

MIAMI, Fla.—An order to prepare plans for 40 all-electric kitchens has been placed with Florida Power & Light Co. by McLean Developments, Inc.

The McLean organization is building 40 new homes in a Miami subdivision. Although no two of the kitchen plans will be exact duplicates, they were ordered on a wholesale basis to take advantage of the reduced prices which invariably accompany mass purchases.

Complete electrical equipment will be installed in each kitchen at an approximate cost of $450. This amount will be added to the mortgage and paid on a monthly basis.

Push-Button Tuning Used on 3 Crosley Radio Models

CINCINNATI—Three new radio models with push-button tuning have been introduced by Crosley Radio Corp.

The Prestotune 11 console has an 11-tube superheterodyne chassis and a V-front cabinet of quarter-stripe and half-round walnut. The three bands cover 535-1,850 kc., 1,900-6,600 kc., and 6,500-22,000 kc.

It also has a new type selector switch, a gold reflector-type mirrodial, 12-in. plug-in type electrodynamic speaker, three gang condenser, variable selectivity, and bass compensation on broad automatic volume control.

Feature of this model is motor tuning with eight push-buttons, and the ease with which these buttons can be set up or changed. It is possible to change from manual tuning to push-button tuning without switching. Several buttons cannot be locked down to cause continuous operation and consequent overheating of the motor. A squelch tube makes the set silent between stations when push-button tuning is being employed.

The set may also be had with one or more remote control boxes with duplicate push buttons. These sets eliminate the necessity of a switch to throw control from the set to a remote point.

The Prestotune 12 console cabinet is also of walnut and has a sloping panel and top. The lowboy model, a departure from conventional console styles, has recessed controls in the top of the cabinet. Cabinets of both the 11 and 12-tube models were styled by Walter Dorwin Teague.

The chassis in both 12-tube models has all the features of the Prestotune 11 console, plus an R. F. stage. The 12-tube models use four tubes in push-pull parallel in the output system. This results in 14-watt output with low distortion and wide range.

Hotpoint Names Randolph As Vice President

(Concluded from Page 1, Column 4)

recognition of his contributions to the electric range and water heating industry over a long period of years. These include his development of the present Calrod unit.

After graduation from the University of Texas and special graduate work in chemistry at M.I.T., Mr. Randolph joined General Electric Co. as assistant to William Stanley.

Later he was made managing engineer of the heating device department in the Pittsfield works of General Electric, and in 1918, when this unit of the company was consolidated with the Hughes Electric Heating Co. and the Hotpoint Co. to form Edison General Electric Appliance Co., Mr. Randolph came to Chicago as chief engineer.

Touch Tuning Theme Of G-E Radio Drive

BRIDGEPORT, Conn. — The 10 models which have been added to the General Electric 1938 radio line are being introduced to the company's sales organization through a series of field meetings conducted by Ernest H. Vogel, manager of the radio sales division.

Plans for merchandising the models, which include four AC consoles, four AC horizontal table models, and two AC-DC sets, were presented by C. M. Wilson, G-E radio sales manager, and A. A. Brandt, radio advertising manager.

The G-E fall advertising campaign on "Touch Tuning" is now in full swing and will be continued throughout the fall season, according to Mr. Vogel. New models are now being shown by distributors to dealers.

Leading the group of 10 models is Model F-96, a nine-tube console with touch tuning and a continuous reception range from 540 to 18,000 kc., and listing around $100.

Through touch tuning, the set can be automatically tuned to any one of seven pre-selected stations. Automatic frequency control is included in the circuit to insure perfect tuning at the touch of a button, the manufacturer claims.

Other features of the nine-tube console include: the louver dial, tone monitor circuit, 12-inch stabilized dynamic speaker and visual volume and tone controls.

Modern in cabinet design, finish of the set is of striped American veneers decorated with inlaid bands of zebrawood. The model is 41 inches high, 26½ inches wide, and 14½ inches deep.

Model F-65B is a six-tube, two-band set; model F-77 is a seven-tube, two-band set; and model F-85 is an eight-tube, three-band set. Each of these models has the G-E tone monitor circuit, louver dial, visual volume and tone controls, and a 12-inch speaker.

Models F-77 and F-85 also have the new G-E visual tuning aid, the cathode-ray tuning indicator.

Models F-40 and F-51, the new four and five-tube table sets, feature plastic cabinets of modern design. Model F-40 lists at $20. Model F-51 sells for approximately $30 list price, and has a 6½-inch dynamic speaker, tone visual volume, and tone controls, cathode ray tuning indicator and cabinets of selected veneers.

Alter Dealers View New Bendix Washer

CHICAGO—The Harry Alter Co., Grunow refrigerator and radio and Bendix laundry equipment distributor, held a four-day dealer meeting at the Drake hotel Oct. 3 to 6 to introduce the Bendix home laundry to its dealers, reports Arthur Alter, vice president. Demonstrations were held each hour during the meeting, and the Bendix sales and advertising program was explained by executives.

SELLING ELECTRIC RANGES

Westinghouse Survey Shows Up the Qualifications of A Good Range Dealer

MANSFIELD—A top-flight range dealer is one whose store is good, who handles a complete line of electrical household products, who has well-trained outside retail salesmen, a representative range display, who uses the complete electric kitchen effectively, advertises in local papers, and knows how to sell the product on features that most appeal to women.

This conclusion was formulated by Westinghouse Electric & Mfg. Co.'s electric range division after surveying the operations of 86 range dealers in 17 states, who were selling a good percentage of ranges.

The survey showed that approximately three-fourths of the stores were classified as "excellent" or "good" in exterior appearance.

MAINLY APPLIANCE DEALERS

Largest number of the stores were classified as electrical appliance dealers, although the list was high in hardware and furniture stores. The list also included automotives, musical, radio, jewelry, house-furnishings, real estate, and others.

The electric range rated second in volume of electrical household equipment sold; electric refrigeration averaged first, the survey showed. Seventy-one of the 86 dealers sold a complete line of electrical equipment for the home, including refrigerators, ranges, washers, ironers, cleaners, water heaters, and small appliances.

62 HAVE FLOOR DISPLAYS

That floor-display is an important essential was indicated by the fact that 62 of the 86 dealers had three or more ranges on their floor when interviewed; the average was 5.6 ranges. Twenty-three of the dealers had a complete electric kitchen installed on their floors.

Dealers who had an all-electric kitchen claimed that they had successfully used it to sell electric kitchens and individual products, and for demonstration and display.

Seventy-two dealers had outside retail salesmen, the average being four. Sixty-four stated they were going to add more salesmen.

Two-thirds of the 86 dealers held regular scheduled meetings for salesmen, and followed manufacturers' training courses. While there was no standard method of equipping the retail salesmen, the records indicated that the well-equipped salesmen did the outstanding job.

SALES CONTESTS

Majority of dealers interviewed held contests for their salesmen—monthly and seasonal — offering prizes, including extra commissions, cash, clothing, football tickets, etc. for sales achievements.

Seventy-one of the dealers believed their salesmen should know how to cook, and had either trained them or were planning to do so.

Slightly more than half of the dealers stated that most sales are closed in the prospect's home. Approximately 45% claimed that most sales were closed in the salesroom.

The tabulation of how dealers obtained range prospects was as follows:

Method	Number of Dealers Reporting
User's suggestion	68
Walk-ins	44
Cold canvass	34
Advertising	25
Friends	19
Others	10
Total	200
Base	86

Sixty-four of the dealers advertised ranges in local newspapers. All of the dealers used time selling.

Investigation showed that time-selling entered into over 25% of all dealers' sales. One of the most useful selling features, from the dealers' standpoint, was a long term, low-rate finance plan, which brought monthly payments under $5.

Seventy-three had a plan of calling back on a range purchaser, to see if the range was satisfactory and to get additional leads. Features stressed in range presentations were ranked in the following order:

Feature	Mentioned	Percentage Mentioned
Cleanliness	50	58.0%
Economy of operation	23	26.7%
Convenience	22	25.5%
Better cooking results	11	12.7%
Other features	52	
Total	144	
Base	86	

Answers obtained from 113 retail salesmen and from 413 range users further rounded out the picture of which features sell ranges. The salesmen rated cleanliness, convenience, economy of operation, and better cooking results, in that order.

Users placed economy of operation second to cleanliness, said that ranges were easy to use and time saving, rated better cooking last.

Promotion by Utility plus Bonuses Help to Build Range Sales in St. Louis

ST. LOUIS—An extensive series of promotional aids designed to hit directly at electric range dealers, salesmen, and prospects in the territory of Union Electric Light & Power Co. recently was used by Electric Cookery Council of St. Louis in cooperation with the utility in a three-month campaign endeavoring to build up electric range sales.

As an incentive to dealers and their salesmen, the utility offered bonuses of $4 a range to dealers and $2 a range to salesmen.

Salesman training, including meetings sponsored either by dealers or the utility and a booklet describing the "how" and "why" of successful range salesmanship, also were provided. The sales manual contains a step-by-step sales presentation from "getting the buyer's attention" to "getting buying action." Fundamental task of any range salesman, according to the booklet, is educating the prospect to the advantages of electric cooking.

Dealers were permitted to bring prospects, either in groups or individually, to the Union Electric kitchen, so that they might see for themselves the superiority of cooking the electrical way. Special demonstrations were arranged for sufficiently large groups.

In addition, the utility offered to send its representatives into the homes of new range owners to follow through with demonstrations and instruction to insure satisfaction.

Union Electric Light & Power's free range wiring and installation plan also continued in effect during the campaign.

As a "door-opener," the utility furnished a handy collection of household information printed on a hinged series of cards. This folder was designed so that it might either be hung on the kitchen wall or divided into cards for the recipe box. Information in the folder was of a general nature, but mention was made of the advantages of electric cookery.

Each of the folders was numbered, and by giving this number, any woman holding the folder was entitled to call the utility's home service department for personal advice on cooking problems. Records were kept of the numbers assigned to each dealer, and dealers were informed whenever a prospect called for information. This gave dealers an opportunity for follow-up calls.

As a final punch to prospects, the utility and the cookery council cooperated in offering a booklet of "proof" concerning the value and economy of electric cooking. This booklet contains testimonials from 30 electric range users in St. Louis and vicinity, together with the number of electric appliances each family uses and the family's monthly electric bill for an entire year.

To back all this specialized promotion, the utility and the cookery council sponsored daytime and evening radio broadcasts, an extensive billboard campaign, and a series of newspaper advertisements.

Commercial Cooking Council Organized

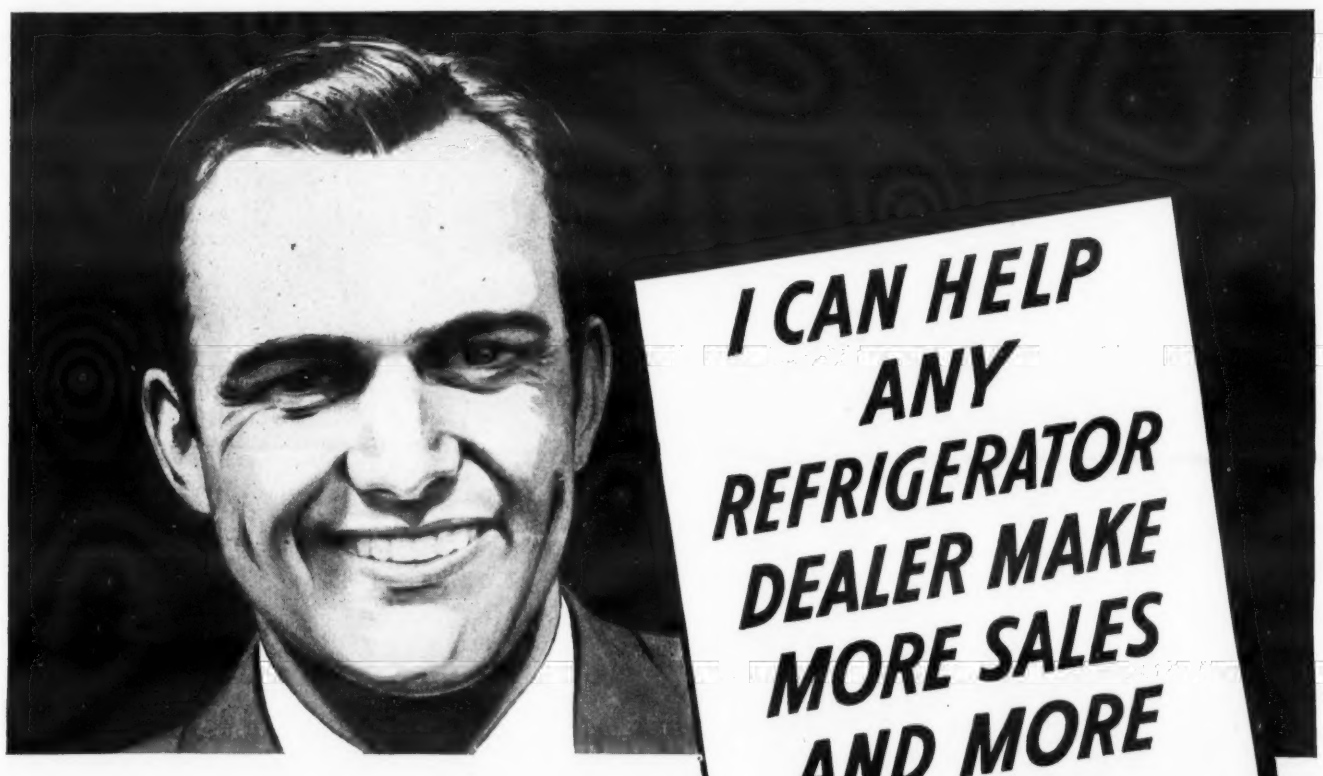
NEW YORK CITY—In an effort to promote the sale of commercial electric cooking equipment, the food service equipment section of National Electrical Manufacturers Association and the commercial sales sub-committee of Edison Electric Institute have organized a commercial electric cooking council.

Initial efforts of the council will be directed towards promoting the sale of counter cooking equipment. Speed and economy of electric cooking are selling points which will be stressed in the drive.

P. M. Alden, Philadelphia Electric Co., is chairman of the newly formed Council, and Bruce Fleming of National Electrical Manufacturers Association is secretary.

Nema members supporting the drive in cooperation with Edison Electric Institute include: Edison General Electric Appliance Co., Inc., Griswold Mfg. Co., Hamilton Beach Co., Landers, Frary & Clark, McGraw Electric Co., The Silex Co., and Wells Mfg. Co.

Promotional material on the campaign includes a plan book, direct-mail pieces, and a news sheet prepared by a plan committee composed of B. M. Riker, Rockland Light & Power Co.; Ernest Laws, Philadelphia Electric Co.; T. I. Messenger, Buffalo Niagara & Eastern Power Co.; Robert Arnold, The Silex Co.; M. E. Miner, Griswold Mfg. Co.; and J. M. Welch, Edison General Electric Appliance Co.



I'll sell refrigerators for you that you couldn't sell without me.

I know the people in your community . . . particularly those of moderate means who buy on the instalment plan.

They know *me*, too, through extensive national advertising of the service I render them, and through actual dealings with me in previous purchases of motor cars, refrigerators, ranges and other appliances.

They like the way I've treated them. They'll do business with me again. I can make them your customers.

I know how to investigate their credit standing without offense or embarrassment.

I know the danger signals that warn of bad risks. I can protect you from them.

I know how to keep collections up to date and relieve you of the embarrassment of an occasional repossession, without losing you any of your customers' good will.

It's my business to know all these things and to employ them to your advantage.

I'm the local manager of a Commercial Credit Company office. You can get in touch with me in any of 193 offices in the principal cities of the United States and Canada. When you adopt Commercial Credit Company financing for your time sales you get 100% cooperation from me on credit, collections and remittances.

You can concentrate on selling.

RADIOS RANGES ELECTRICAL EQUIPMENT HEATING EQUIPMENT • AIR CONDITIONING UNITS

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COMMERCIAL BANKERS CONSOLIDATED CAPITAL

HEADQUARTERS: BALTIMORE AND SURPLUS $65,000,000

SERVING MANUFACTURERS, DISTRIBUTORS AND DEALERS THROUGH 193 OFFICES IN THE UNITED STATES AND CANADA

Meat Markets Best Saginaw, Mich. Commercial Buyers

• • •

Sales Promotion on Replacement Business by Factory Urged By Kessel & Rummel

By Winifred B. Hughes

SAGINAW, Mich.—Because sales of commercial refrigeration equipment this summer have lagged behind those of last year, when Kessel & Rummel, Kelvinator dealership, sold approximately $25,000 worth of equipment, E. G. Rummel, in charge of the company's commercial sales, claims that "business is very slow," and that August business did not touch that of last year.

"We did three big market jobs last year that boosted our sales," Mr. Rummel declared. Meat markets offer the most fruitful source for commercial sales, he stated, with beer-cooling equipment second.

FOLLOW UP BEER LICENSES

"Concerns got their beer licenses here last night, and we are right out there trying to sell them cooling equipment today," he added.

The firm has installed 20 beverage cooling units so far this year. Two salesmen work on the commercial line, and emphasis is placed on direct contact rather than any specific line of advertising or promotion, we were told.

"I wish the factory would get more promotion material on commercial business," Mr. Rummel declared. "Anything that would create the desire to put in new equipment in place of the old systems they are using now would suit us.

"We'd like to see a promotion program on commercial equipment, built up like that on household refrigeration," he declared.

Canvassing, and sales talks playing up better temperature control, better humidity control, less food dehydration, and more economical operation, comprise the backbone of the Kessel & Rummel commercial sales program.

Mr. Rummel told us about one of the big jobs which his company did in replacing a 55-hp. ammonia system with an installation containing one 5, one 3, and two 2-hp. units. The equipment handles the complete refrigeration job, including ice-making.

Water coolers sold by Kessel & Rummel this year include 10 units in the Wilcox Rich Co., nine in the Columbia mills, four in the E. T. Ferrel Co., and two in the Saginaw Daily News office. The company had previously installed two coolers for the News.

Although the firm doesn't sell air-conditioning equipment because installations must be handled through the distributor or through the factory, Mr. Rummel expects that they will in the future—and thinks that the firm may sell room cooling units next year. "We have had lots of requests for room cooling units this summer," he said.

Kessel & Rummel is promoting the Kelvin Home in Saginaw. One such home is now being built; that is, the home is to have complete electrical equipment and air conditioning, but the original plans are being enlarged upon to fit the customer's requests.

What Happened in Commercial This Year

What fields proved best for commercial refrigeration equipment this year? What methods were used in reaching prospective purchasers? What suggestions do dealers have to offer regarding factory assistance?

We do not know of any survey of all or a great part of the commercial refrigeration dealers in this country that affords this information. However, interviews with all the leading commercial dealers in one city, such as those reported on this page, give a reliable sample of the conditions and feeling in the commercial field.

Both dealers and manufacturers should find much in these interviews that is interesting and informative.

$7,000 Average Monthly Sales On Allied Lines Made by Carrier & Hussmann Dealer

"The best year we've ever had." So Ray Fischer, who heads retail sales of commercial equipment for E. G. Fischer & Sons, labeled this year's business.

"We will average $7,000 worth of business a month throughout the year," Mr. Fischer said. This total, he added, included heating and air-conditioning sales also.

Carrier commercial refrigeration, air conditioning, gas-fired home Weathermakers; Hussmann-Ligonier display cases, reach-in boxes, and walk-in coolers; and Combustioneer stokers are lead items in the company's line, although it also handles refrigeration parts and supplies and store fixtures, and is distributor for Grunow household refrigerators.

The company has sold 90% of the $18,000 quota of Hussmann-Ligonier equipment set for the year, and Mr. Fischer believes that it will sell about an equal amount of Carrier and Hussmann equipment this year. Best market for commercial sales, Mr. Fischer says, is food stores.

SIX INSTALLATIONS

Fischer & Sons has made six air-conditioning installations during the past year, Mr. Fischer said. The Mary Lee Shop, Cunningham's drug store, Ferris Bros., a Cunningham store in Bay City, and a Saginaw residence have been equipped with Carrier systems, as has the photo developing room in the Saginaw Daily News.

Equipment in the Mary Lee Shop is a 7½-ton system, the Cunningham store has a 15-ton job, and the Ferris Bros. installation is a 5-ton system.

"The residential installation is the first year-around home installation we've had," Mr. Fischer says. "The equipment in it provides complete year-around air conditioning. The other installations have been winter heating and summer cooling systems."

Equipment in the residence, a $4,500 job, includes two oil burners, a Carrier Weathermaker, and a 5-ton refrigeration machine.

USE OF DIRECT MAIL

One salesman besides Mr. Fischer sells commercial refrigeration, air-conditioning, and heating equipment. The other man works the outside territory, and Mr. Fischer takes care of accounts in the city, and the larger accounts throughout the territory.

A mailing list purchased from an agency and containing 1,000 names, of which 750 are food stores and 200 restaurants in the northeastern part of Michigan, is mainstay of the Fischer prospect list on commercial customers.

"We have an addressograph and have made plates for all the firms, and we send them all promotion material," Mr. Fischer said. "I'd planned to contact the merchants each month, but instead we've been sending them direct-mail pieces every second month."

The territory salesman uses a trailer, which contains a small meat display case and other commercial equipment, to display products to customers in outlying sections.

A commercial installation of which Mr. Fischer is proud is that in the new Hamady Bros. store in Flint, in which he installed 62 feet of commercial counters.

"I believe that this store is one of the finest grocery stores in the country," Mr. Fischer said. Not only is the electrical and refrigerating equipment very complete, but the store's decorative motif is exceptional. Slanted tile walls, on which are mosaics depicting fruits, vegetables, and animals enhance the attractive appearance of the store.

SALES TO HAMADY STORES

Fischer & Sons has installed 11 counters in Hamady Bros. stores since January. There are 10 of the Hamady stores in this section of Michigan.

Mr. Fischer has a photograph of one of the Hamady stores in which he had installed equipment, part of an album of Fischer installations which is used as a sales manual.

"We have the photographs grouped so that all installations of one type are together, and we use this in sales talks to new customers," he said.

Another promotional tactic used by Mr. Fischer is to give a sales talk at his Grunow dealer meetings, urging dealers to send him in any tips on commercial refrigeration or air-conditioning prospects.

"We have 85 dealer accounts, and I obtain some leads from them," he said.

Utility Finds Profitable Market in Neighboring Town of Frankenmuth

Selling Frigidaire commercial equipment in Saginaw, the Consumers Power Co. is finding chief fields for sales in groceries, meat markets, and places requiring beer cooling equipment, according to E. H. Krueger.

Consumers Power has made a number of installations in Frankenmuth, small town located approximately 15 miles from Saginaw, Mr. Krueger said.

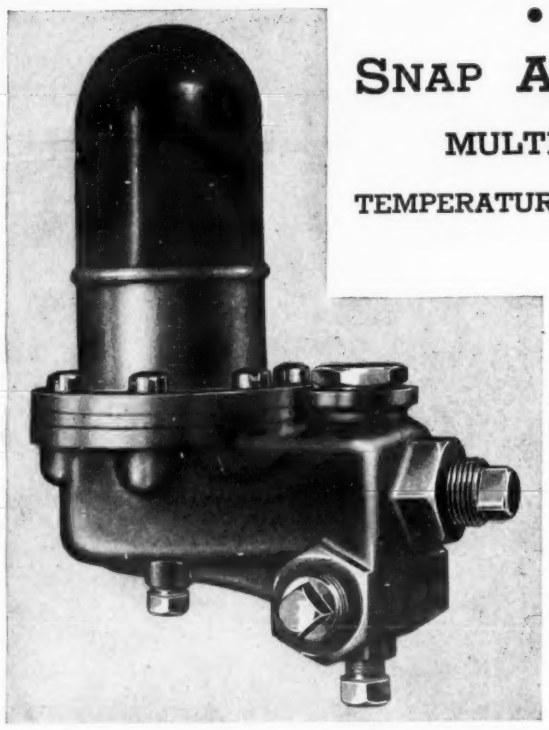
The jobs included a 2-hp. cooling unit in a slaugter-house of which Otto Hubinger is owner, another slaughter-house installation consisting of a 1½-hp. system with fin-type WX coil, and equipment for the Fischer hotel, including two reach-in boxes and a water cooling system.

Mr. Krueger is sole salesman of

(*Concluded on Page 11, Column 1*)

STANDARD REFRIGERATING APPLIANCES

ADJUSTABLE RANGE
from
20" of VACUUM to 60 POUNDS PRESSURE



SNAP ACTION
MULTIPLE
TEMPERATURE VALVES

TYPE "S2V"

This valve, regardless of range or differential setting, opens and closes with a positive snap action at any previously determined settings within its limitations. This positive action permits this valve to be used in any type of installation or in any combination of dry gas and flooded evaporators. It automatically maintains the temperature of one evaporator in a refrigerating system between maximum and minimum limits of temperature variation, which may differ widely from the maximum and minimum temperature variations of other evaporators in the same system. With two or more valves in the same multiple system the different evaporator temperatures are maintained merely by adjusting the range and differential of the several valves. The adjustable range feature is exclusive.

Write for Bulletin No. 17 for detailed information.

AMERICAN INJECTOR COMPANY
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STREAMLINE FOR SAFETY AND ACCURACY IN PIPE FITTINGS
TRADE MARK REG. U. S. PAT. OFFICE

REFRIGERATION AND AIR CONDITIONING

● The STREAMLINE Solder Fitting is the only solder type fitting on the market in which POSITIVE PROOF of a leak-proof joint can actually be seen without resorting to a pressure test.

There is no guess work about STREAMLINE. The solder inserted through the feed hole (an exclusive feature) completely seals the bonding surfaces, and its appearance at the end of the fitting assures you, beyond all doubt, that the joint is refrigerant proof, that vibration cannot work it loose, and that it is permanent and actually stronger than the tube itself.

STREAMLINE Forged Brass Fittings are furnished in complete range in couplings, tees, elbows, etc., with male and female ends and in reducing sizes. Send for Catalog and Price List 2003 illustrating our complete line of Valves, Fittings (solder type and flare), Dehydrators, Strainers, etc., for Mechanical Refrigeration.

MUELLER BRASS CO.
PORT HURON, MICHIGAN

WILL BE WAITING TO SEE YOU AT BOOTH NO. 10—R. S. E. S.

Diversified Lines Sought by Dealer In Saginaw, Mich.

(*Concluded from Page 10, Column 5*)

commercial equipment for the power company, and users are his main source of leads, he claims.

Because there is a slight chemical taste to the drinking water in Saginaw, water cooler sales have been very good, Mr. Krueger said.

Although he has been selling commercial equipment with Consumers Power for only a year, Mr. Krueger has been selling commercial refrigeration for nine years.

"I sell prospects guaranteed quality to fit their actual needs; I never mention horsepower to them." he said.

Range Market Encouraging To Wilks Distributing Co.; 12 Pelco Coolers Sold

Wilks Distributing Co., distributor for Sparton in Saginaw, added Pelco beverage coolers to its line this spring and so far has sold 12 coolers, Walter Schultz, manager of the retail sales division, told us.

Taverns and stores selling beer bought the units sold so far, he said. Wilks had just received some International oil burners, and plans to push sales of this article. The company may add more commercial equipment later, Mr. Schultz said.

Enthusiastic on the subject of electric ranges, Mr. Schultz said that Wilks has sold about 250 ranges in a little over two years. Gas range sales have been on a par with electric sales, he stated.

Electromaster ranges were sold up until recently, but the company is now selling Crawford electric ranges and Chambers Gas ranges.

"We had a demonstration on Chambers ranges in the store Monday (Aug. 30) and about 75 women attended," Mr. Schultz said. "We gave a $50 prize, the cash award being applicable on a new gas range."

Conducted by the Chambers factory home economist, the demonstration resulted in two direct sales, and the company obtained several new prospect names.

April and May were best refrigeration selling months for the firm, but things have been slow since then, largely as a result of unsettled labor conditions, Mr. Schultz believes. But he concurs with Saginaw commercial dealers in anticipating a "good fall business."

Being on the job and making no false claims for merchandise are two of the factors involved in Mr. Schultz's salesmanship. He told us of a sale he had made recently.

"I had just gotten into my car this night, about 9:30, when I saw a couple stop in front of the store and look in. So I got out to see what they wanted.

"They were looking at ranges, and it seems they'd been all over town and couldn't make up their minds. The man said that they had been considering a gas range, that they hadn't looked at electric ranges.

"So I showed them an electric range and told them about it, and before they left I had a signed order for an electric range and for an electric refrigerator."

Leads obtained by canvassing, and tips from users and friends, bring in sales for this company. Three salesmen, who sell all the merchandise carried, work under Mr. Schultz.

Georgia Commercial Sales Total $291,822 for 7 Mos.

ATLANTA—Bolstered by $40,005 worth of commercial refrigeration equipment (including water coolers) and $9,945 worth of air conditioning, commercial appliance sales of Georgia Power Co. reached a dollar volume of $69,975 for July, a $622 increase over sales of the previous month.

Commercial sales for the first seven months of the year totaled $291,822. Of this total, commercial refrigeration and water coolers accounted for $163,982, air conditioning for $23,060, and ventilating fans for $13,259.

Best air-conditioning sales jobs for Georgia Power during July were by the Atlanta, Columbus, Macon, and Rome divisions.

'38 Commercial Sales Expected to Double Total of 1937

MANSFIELD—Sales of commercial refrigeration equipment in 1938 will more than double the volume of sales made during 1937, was the prediction voiced by T. J. Newcomb, commercial refrigeration sales manager of Westinghouse Electric & Mfg. Co., before some 35 field supervisors who recently gathered here for the department's annual sales and promotion meeting.

The 57% increase shown by sales during the first seven months of this year, compared to the corresponding period in 1936, is only an indication of the increase to be expected next year, Mr. Newcomb declared.

The three factors which he believes will be largely responsible for this anticipated increase are: generally improved business conditions; steadily increasing consumer demand for strictly fresh, well-preserved foods; promotion of "packaged" merchandise for commercial refrigeration installations.

The American housewife, Mr. Newcomb stated, now knows that she can keep perishable foods fresh and crisp in her own electric refrigerator, so she is beginning to demand equal or better food preservation from her source of supply. Wholesale and retail butchers, grocers, and market operators, he said, are commencing to feel the pressure of this demand, and the need for installing adequate commercial refrigeration equipment.

Mr. Newcomb described the emphasis on "packaged" commercial units as an event that should put "new life" into the commercial refrigeration industry. Commercial installations, he said, have required the service of a highly trained and skilled engineer, because of the complex and heterogeneous nature of the equipment.

The self-contained or "packaged" product, Mr. Newcomb explained, eliminates much of this difficulty. It puts even the small dealer in a position to sell commercial refrigeration with a satisfactory profit, and widens the potential installation horizon.

Westinghouse sales promotion, advertising, market analysis and other merchandising plans were presented to the field representatives by Jay Baughman, D. C. Davison, George Park, R. H. Tull, and O. A. Shoup. Round tables followed.

Refund on Power Demand Rate Ordered to User Of 7 ½-hp. System

CONCORD, N. H.—In a case declared without precedent in New Hampshire, the Public Service Commission has ordered the Public Service Co. of New Hampshire to make reparations of $153.60 to Louis Cerier, proprietor of a wholesale meat concern in Nashua.

The amount includes charges for electric service for an electric refrigeration plant which was installed in 1931, with interest at the rate of 6% per year for electricity fees from April 1, 1933, to April 1, 1935.

The dispute arose over a 7½-hp. motor which has been and now is operating the refrigeration plant. It was pointed out the petitioner's active connected load was estimated at 7½ kilowatts and the load charge was made on that basis. Cerier claimed in April, 1935, the electric company, at his request, installed a demand meter which showed the active connected load to be 4.3 kw.

Explaining the case, the Public Service Commission said:

"Electric service is furnished under the company's commercial schedule, a two-part rate consisting of an active connected load charge and an emergency consumption charge. The claim for the refund is based on the active connected load charge.

"The company claimed that in estimating the active connected load in this case it followed an established trade practice whereby, in the case of small motors, one kilowatt of demand is taken for each horsepower rating of the motor, while an estimate of demand may vary widely from the actual demand as shown by the demand meter, it has been acceptable to the commission in the past as a measure avoiding large unwarranted capital expenditures."

Interconnecting Zone System Proves Efficient Setup for Denver Mortuary Air-Cooling Job

DENVER—First mortuary in Denver to be equipped with an air-conditioning system using mechanical refrigeration is the Hofmann Mortuary, Inc., in which the local Frigidaire branch installed equipment.

The system has been installed to operate in three zones. The first zone includes the small drawing-room chapel and adjoining family room; the second zone includes the main chapel and adjacent family room; and the third, the second floor of the mortuary which contains six slumber rooms, three display rooms, and four offices.

The three zones are controlled from a main panel board located on the first floor. Switches on the board control delivery of conditioned air to one zone. Each unit has a control switch by which it may be turned off separately from the other units in the zone, and by which only the fan to circulate air may be operated.

Each unit also has an adjustment which allows the air coming from it to be directed in any of eight different directions.

The system is arranged so that only one zone operates at a time since, according to Mr. Hofmann, there will never be any occasion when more than one zone will be in use at a time. This feature reduces operating costs.

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Czech Household Market Boomed by Armament Program

. . .

Beer Dispensers & Butcher Shops Prove Best Fields for New Refrigeration Systems

By John Strohm

A COUNTRY of 15 million Czechs, Slovaks, Germans, Poles, Hungarians, and Jews surrounded by a bunch of powder-keg nations; a land where prosperity is booming because "we're arming like devils; and a population for whom beer is both food and drink—that's Czechoslovakia.

"We believed and trusted in the League of Nations until we saw Japan invade Manchuria, and Italy gobble up Ethiopia. That jolt woke us up!" declared one Czech. "Waking up" meant this country chose an armament program as a more reliable defense than sanctified league treaties.

Before the war the standard of living was very low and the rich class limited. But after independence was proclaimed in 1918, the general situation changed. Land was taken from the vast holders and given to the farmers. Money which formerly went to Austria remained in Czechoslovakia.

Then the Depression and the League combined about the same time to make times miserable for Czechoslovakia. The local population could not absorb the many manufactured products, so the factories closed, unemployment rose to one million. And the people began to wonder if they would be at the cross-roads of the next war. Surrounded by such countries as France and Germany, Austria and Poland, Russia and Italy, they hear insults hurled on all sides.

So the country embarked upon an armament program which, combined with plenty of foreign orders for big guns, started this highly industrialized country to humming at increasing speed. Factories reopened and building programs got under way. Such plants as Skoda, the Krupp of Czechoslovakia, turned out munitions in vast quantities. (While the writer was quaffing beer and talking refrigeration in fair Bohemia, Skoda, which also manufactures big refrigeration plants, dragged down a fifty million dollar order to furnish munitions to China. ("Skoda" in Czech means "too bad.")

As the world economic conditions improved, the purchasing power of the people rose steadily. Unemployment dropped to 350,000. And with the increase in living standards came a desire for the more refined life such as the people hadn't enjoyed in centuries of domination by foreign countries.

VACATIONS FOR ALL

By government order all laborers now get an annual vacation of 10 days with pay while office workers get three weeks. They receive old age pensions, and are protected by sick benefit insurance which provides free medical treatment for the workman and his entire family.

The government is based upon lines similar to our own with a president and a parliament. (Their independence was proclaimed from the same Philadelphia hall where the U. S. got its start. Our thanks: Prague has a Wilson station and a Hoover street.)

Although few Czechoslovakians think there is danger of an immediate war, they are prepared. At $10 each gas masks are too expensive for many people but every person in a city knows what to do in case of air raids. A list of the occupants of all buildings hangs on the wall with instructions for each—like fire drill orders on board a boat. Factories too have been moved to the interior and divided into small units.

Since the Republic inherited four-fifths of the industrial resources of the Austro-Hungarian Empire, the majority of the people are engaged in a highly diversified industry. The remaining two-fifths are agriculturists raising grain, potatoes, sugar beets and hops. Leading industries are coal mining, forestry, sugar refining, metallurgy, and manufacture of glass, porcelain, leather goods, linen, cotton, and woolen textiles, furniture, imitation jewelry, wood pulp and paper, musical instruments, and toys.

U. S. IMPORTS TOTAL $28,500,000

Imports from the United States in 1936 amounted to about $28,500,000 and consisted mainly of raw cotton, non-ferrous metals, petroleum products, fresh and dried fruits, resin, machinery, office equipment, minerals, chemicals, wooden wares, and automotive vehicles.

Exports amounted to about $28,000,000, chief items being linen goods, gloves, glassware, leather shoes, malt, imitation stones, woolen goods, cotton goods, burlap, hides, and buttons. The U. S. stands second in trade with Czechoslovakia with 7.6% as compared with Germany's 19%.

Both local manufacturers and foreign importers found the refrigeration market excellent at present and saw a substantial and steady increase in business for the future.

The big volume of business, probably 85%, is in the commercial field with butchers' cooling and beer dispensing equipment the best sellers.

All refrigeration men estimated the butchers to be their best customers; yet a commercial paper says only 10% of them are using electrical cooling equipment. Butchers are good buyers because they make their own sausages and cure their own hams—Prague sausages and hams have a real name in the meat-eating world.

In Bohemia, the home of the famous Pilsen brew where they drink beer like water, it is only natural that beer dispensers should be a necessity. But manufacturers must add more than the two taps with which most American jobs are equipped. They use an average of six taps to dispense shades from light to dark, and five to 15% alcoholic. In century-old buildings, monasteries, and beer halls the people go the year around, take their lunch, buy mugs of beer.

COMMERCIAL MARKET GOOD

Cooling equipment for restaurants, hotels, and dairies are good sellers. Ice cream at present has a slow market. It is made by small dealers who for the most part use the old cracked ice freezing methods still used down on the farm when company comes for Sunday dinner.

Although household refrigeration only got its real start during the past two years, there are now about 3,000 household units in use, ranging in price from 2,500 to 8,000 crowns. (1 crown = 3½ cents.)

But now since its advantages have been realized and economic conditions warrant it, building contractors are installing it in all new buildings, apartment houses, and such. Frigidaire, Tatra and other manufacturers report many such installations recently with central refrigerating units servicing the built-in boxes.

The old houses, as one man said, "don't even have bath tubs or W. C.'s—let alone electric refrigerators."

USE OF ICE NOT COMMON

The people are not yet entirely sold on the idea of refrigeration since even the use of natural ice has never been common. "In America people sell themselves; but here they don't think they need it," voiced one dealer.

The demand for household units is growing steadily, however, and refrigeration men forecast a big future within the next few years. Government and cities are encouraging its use through education, reduced electrical rates, and installation in governmental institutions.

The biggest drawback to refrigeration progress is the highly protective import duties which range from 375 to 3,000 crowns per 100 kilos. Duty on compressors, valves, coils, motors, and thermostats is roughly $6 per 100 pounds while on steel cabinet units it is as high as $48. Consequently, importers bring in only necessary mechanical parts, build the cabinets here.

Negotiations for a trade agreement between Czechoslovakia and the U. S. are now being carried on with prospect of a lower duty on refrigerators and their parts. This would also include automobiles, the duty on which is 200%.

Immediate needs in refrigeration include cooling systems for transportation units, and storage rooms for vegetables and fruits. It is estimated Czechoslovakia loses between 300 and 350 million crowns annually because she has not adequate cold storage rooms for storing her produce and must buy from other countries in the winter.

Czechoslovakia is highly electrified with all villages of 100 and up having access to electric power. Rates are relatively high, averaging 1.80 crowns or about 6 cents per kilowatt for commercial use.

REDUCED ELECTRIC RATES

Just recently the Prague municipal plant reduced rates from 2.70 to .80 crowns on all current used for refrigeration, cooking, washing, and ironing. And in a campaign to increase current consumption, they are promoting the all-electric kitchen with a power rate of .40 crowns.

The market for air conditioning is "just opening up" with several installations in hotels, sanitariums, and cafes. But it will never attain a great sales volume, refrigeration officials predict.

Obstacles holding back the sale of air conditioning are:

(1) Winter is six months long, and other seasons are relatively cool with none of "your American dog days";

(2) Price is prohibitive;

(3) People don't know what it is;

(4) Existence of cold water in areas where air conditioning would most likely be sold, that is, the mountain regions where such famous health resorts as Carlsbad are located;

(5) Electric current rates are high.

10 CZECH MANUFACTURERS

There are 10 manufacturers of refrigeration equipment in Czechoslovakia, with five more making a few boxes a year, and three who import their units and assemble here.

Frigidaire imports all mechanical parts and builds cabinets here, leads in the sale of domestic units, and runs close competition with Tatra in the smaller commercial line.

Tatra and Horak Bros. are the sole manufacturers of compressors although they import their controls from the States.

Praga Works imports Westinghouse household units, and along with Skoda manufactures the bulk of the big ammonia plants. Erste Brunner, Mraz, Coburg, and Eta specialize in commercial jobs. Electrolux is imported from Sweden, Norge and Curtis from the States, and Linde from Germany.

Frigera, Ltd., Kralovska 67, Praha (Prague), which holds the franchise for Frigidaire, controls about 35-40% of the total refrigeration business in Czechoslovakia, exclusive of the big ammonia plants, according to A. Mrna, sales engineer. They lead in the sale of household units, although three fourths of their business volume is in the commercial field.

Since the duty is so prohibitive on metal cabinets, they import only about 10% of the complete American cabinets—for those customers "who want the genuine American article and are willing to pay the difference."

They point to the service they give, their low profit, the fact they sell quality, and have sales and dealer organizations covering the

(Concluded on Page 13, Column 1)

Continued Peace Is Key to Progress in Czech Sales

Czechoslovakia, busy industrial democracy at the "crossroads of Europe," is an active market for refrigeration equipment at present, and an even better potential market if Europe will stay at peace, reports John Strohm, world-touring journalist, who has been writing for AIR CONDITIONING AND REFRIGERATION NEWS on market possibilities in the various countries he has visited.

Mr. Strohm explains the nature of the Czechslovakian market, and gives the viewpoints of Czechs who are playing a leading part in the distribution of refrigeration equipment.

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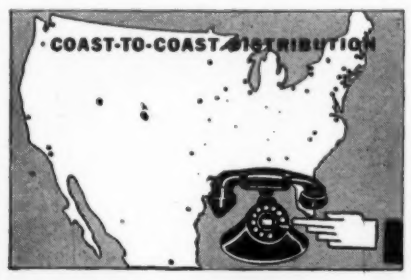

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ACE "LOXIT" PATENTED DOORS

Czech Viewpoint on Import Possibilities Outlined by Dealers

(*Concluded from Page 12, Column 5*)

country as reasons for controlling such a volume of business in competition with manufacturers who can undersell them.

Frigera Has Sold about 7,000 Compressors

Their combined commercial and household installations total 4,000 which means they have about 7,000 Frigidaire compressors in use. According to Mr. Mrna's belief, no other country in continental Europe has so many big units as the 18 4-cylinder compressor installations Frigera has made, 14 in butcher shops and two in dairies.

Frigera is making an especial effort to educate small ice cream dealers to use electrical freezing cabinets. They recently held a demonstration school for restaurant cafe owners, showing them why freezing with electricity is cheaper, more sanitary, and quicker than their present methods. The campaign is bringing results in increased sales.

"Several years of planning in air conditioning are just beginning to bear fruit," according to Mr. Mrna. To date most of their sales have been through ventilation firms who have had the contracts for government buildings and institutions.

They predict the best air-conditioning market will be in hospitals, sanitariums, and the many spas for which Czechoslovakia is famous. Frigera, Ltd., has been established 10 years with a sister firm selling General Motors cars and the German Opal. As a sideline they make machine gun parts in their factory—the writer couldn't be shown that part.

Tatra Makes Cooling Units; Also Autos & Railway Cars

Refrigeration business shows a one hundred percent increase this year for Ringhoffer-Tatra-Werke A. G., although it is but a sideline for one of the biggest industrial organizations in Czechoslovakia which manufacturers automobiles, refrigeration plants and railroad cars in five factories, with 7,000 men on the payroll.

According to Refrigeration Manager Karl Bohm, Tatra is the largest manufacturer of refrigeration in the country, 90% of its business being in the commercial line. The company started making units in 1931 and last year sold between 600 and 700. It also does an export trade with the Balkan countries, mainly Roumania.

Sales to butchers are greatest, closely followed by restaurant and beer cooling installations. Ice cream freezers are just beginning to sell. In attempting to wean the confectioners away from old methods, Tatra has developed a standard job with a capacity of 10 gallons of cream a day, run by a half-horsepower compressor.

Recently installed is a special job in an iron factory—a $2,000 beer cooler and an 80-foot table. The management there spends $35 daily to cool off hot employes with cold beer.

Mr. Bohm doesn't think American manufacturers can compete in commercial units with local manufacturers who have the advantage of being on the home ground.

However, as the biggest railway car manufacturer in central Europe, and an established organization with plenty of capital, Tatra is highly interested in getting in contact with a reliable manufacturer of air conditioning in the U. S., with the possibility a partnership might be formed for distribution to central Europe. "The market in Czechoslovakia is not big, but opening up," he declared.

And if his company could find a mutual basis of cooperation with some American firm, he believes Czechoslovakia could be made a distributing center. Tatra has the organization, man power and capital necessary to put over such a program. Any interested manufacturer may write to Karl Bohm, Direktor Der Ringhoffer-Tatra-Werke A. G., Stefanikova 45, Praha XVI, Czechoslovakia.

Financing Is Big Need, Says Wm. Janak

Wm. Janak, Libus, Czechoslovakia, is now carrying on experiments in quick freezing to meet a need which is costing Czechoslovakia an estimated 12 million dollars annually. He is now buying and freezing strawberries, plums and other fruits on a small scale, selling them during the winter and spring. He predicts a great future for quick freezing methods and cold storage rooms.

But the crying need at present is financing companies. Importers must pay in advance, and the banks are too conservative for anything out of the established order. "The market for refrigeration is good, and opportunity is here; but money is lacking," he asserted.

He advanced the opinion that it was impractical to manufacture compressors in Czechoslovakia until mass production arrives. The Czech manufacturer can never hope to compete in quality and price in a small series with American products.

As an example he said the biggest local manufacturer would not make more than 500 compressors which would be split into several different sizes. A big company will not bother with such a small order of castings, and a small producer turns out such inferior work that 50% must be rejected because of leaks.

Until mass production arrives, he thinks it would be better if refrigeration manufacturers imported the compressors from the States and made the base, condenser, and receiver here.

The market for ice cream is poor because the local ice cream is only frozen ice, so cold it has a reputation of being unhealthful. He believes there is a potential market for an American ice cream, as he has experimented with a cream containing 14% butterfat and an increased latent heat.

He believes an organization making such cream with the cheap materials available could sell dispensing cabinets to the dealers with the promise they would pay for themselves in a short time. But those with initiative have no capital and those with capital are too conservative.

Mr. Janak would like to see a very small compressor on the market with which to run a two cubic foot refrigerator. That is as big as people want now, he says. Electrolux sells units of one cubic foot capacity, but they are too small and too expensive to operate.

Brunner Tells Problems In Servicing Units

"The biggest difficulty connected with the sale of commercial refrigeration in Czechoslovakia is the fact that service must be carried out by the manufacturer himself," according to the refrigeration manager for Erste Brunner, manufacturer of commercial refrigeration and steam turbines, in Brunn, Czechoslovakia.

"And there are no service men just around the corner as in the States. Service men do not exist because they do not receive spare parts from the factories," he explained.

He pointed out selling of refrigeration plants was connected with considerable risk when they were installed in out-of-the-way places in the mountains of in sanitariums in Slovakia.

"Another drawback is the lack of standardization in commercial cases, and the necessity of making a case two inches longer or shorter to fit the customers' needs. People here are not so progressive; they want equipment which will fit in with the way they have been doing for years, and the way their fathers and grandfathers did before them.

"As far as we can judge the market in this country for commercial refrigeration plants is for a long time to come not saturated, but business will be possible only for such makers who will be in a position to come up to individual requirements and who can keep up local service in every respect," the engineer asserted.

Erste Brunner started manufacturing refrigerating plants as early as 1887. In 1934 they started making air and water cooled automatic plants on the basis of methyl chloride for industrial purposes. Aggregates with capacities of 300 to 14,500 calories per hour are manufactured for all purposes.

Poor Materials in U. S. Parts Criticized by Mraz

Although they do not now make household refrigerating plants because "the demand is too small," they intend to go into this line when the market warrants it.

The only kick on American products comes from Ing Mraz of Chocen, Czechoslovakia, manufacturer of commercial refrigeration and airplanes. He declares he is getting poor products from the States, such as automatic expansion valves, switches, and thermostats.

"They corrode because of poor material, and also show poor workmanship. We find Swiss products much better," he said.

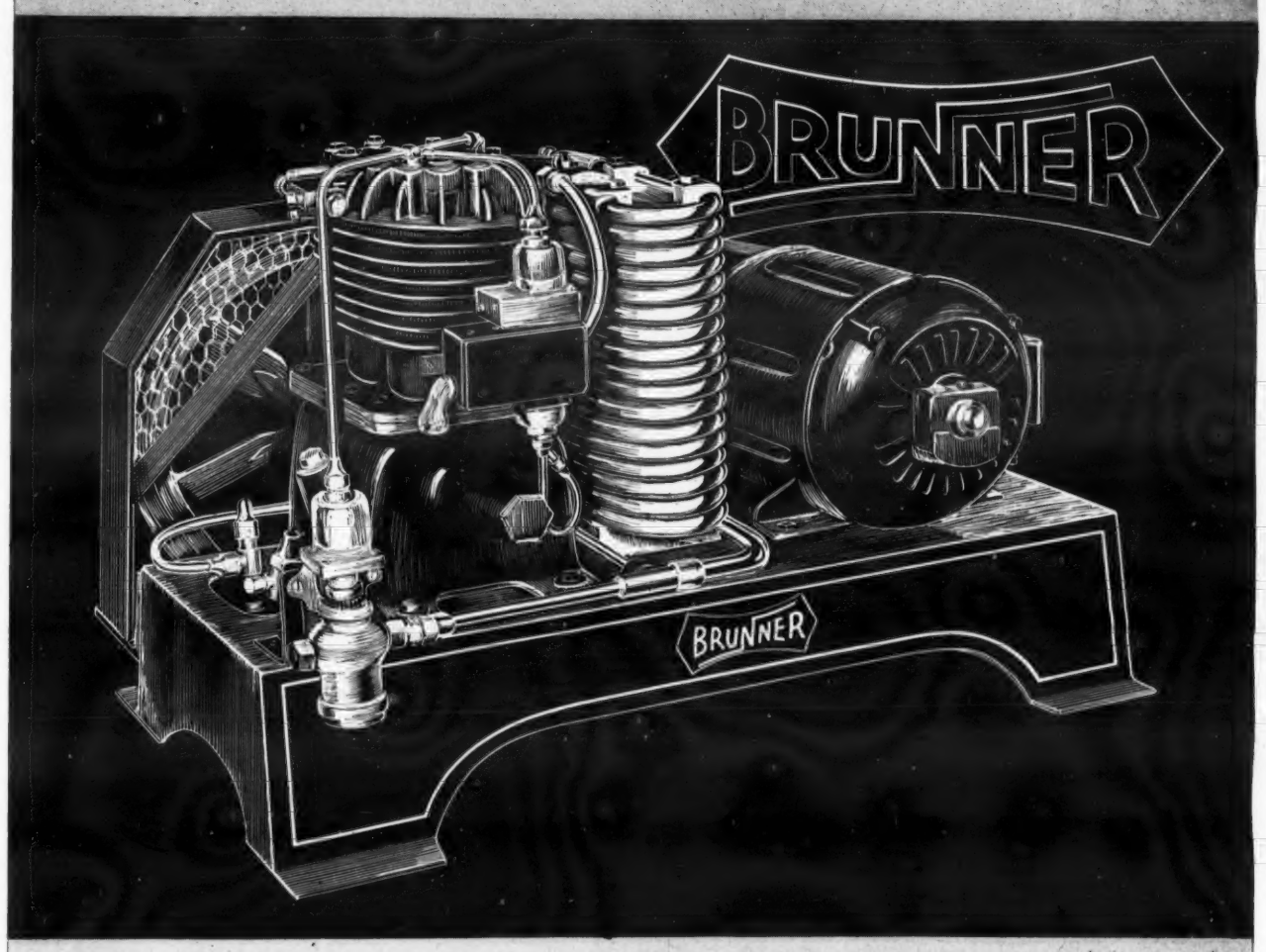
He also complained U. S. companies have no representatives or stock here, which entails long delay.

Practically all of his business is in the commercial lines since domestic refrigeration is too expensive for the people. "A 160 liter cabinet now sells from 4,000 to 5,000 crowns—when it sells for 2,000 crowns people will buy it," he asserted.

The commercial market he finds good. He has made a special unit for Bata, international shoe manufacturer, which attains a temperature of 75° C. below zero. It is used for making synthetic rubber for tires.

Another special appliance he has worked out is for town markets in the Balkan countries, particularly Bulgaria. In Balkan cities farmers bring their products to a central market where housewives do the buying every morning. Mraz has drawn up plans and made a system of cold rooms beneath the surface of the market to supply cheese, meats, and milk to the selling rooms on the surface.

THE BRONZE BEARING FOR THE PISTON WRIST PIN IS ACCURATELY DIAMOND BORED TO INSURE PERFECT ALIGNMENT AND MINIMUM WEAR



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Time Payment Terms

MAJOR development in the appliance merchandising business this fall has been the recent decision of finance companies to shorten terms and increase down payments.

Gloomy prophets have been predicting dire consequences for this move. They say that terms should even be extended to longer periods next year, to offset the higher prices which rising costs of labor and materials will force. To prevent a possible buyers' strike, they reason, the monthly payments should be kept smaller.

Dealers Themselves Favor Shorter Terms

It is true that a large proportion of low-income-bracket prospects for electrical appliances are inclined to ask—not "how much?"—but "how much down, and how much a month?" Nevertheless, a look at some of the resolutions passed by dealer associations in recent months would indicate that the men who actually sell these appliances to the public have little or no fear of the consequences of tightened instalment credit.

Groups of "big dealers," notably the National Retail Furniture Association and the National Retail Dry Goods Association (department stores), have gone on record this year as urging the adoption of shorter terms. State associations, city dealer leagues, and special committees of dealers and distributors in many localities the country over have added their demands for saner credit.

Loss of Volume Not Feared by Dealers

It is obvious that this feeling would not be so unanimous if dealers feared that shorter terms would cost them money. Against the possibility that shorter terms may reduce sales volume, these dealers have weighed the actuality that wild financing, and even well-36 or 40 months basis, is hurting their business.

As one dealer put it not long ago: "It's not too hard for a dealer to make money his first two years in business. But it's the third year that wrecks so many of them—largely because they have got themselves out on a limb on long terms."

For two or three years price competition was bitter in the household refrigeration business. Once that situation got under better control, the competition in terms began. Next, no doubt, the chiselers and throat-cutters will do their disheartening work in terms of trade-in allowances.

Entire Industry Moving Toward Clean Merchandising

But slowly and surely, appliance dealers, distributors, and manufacturers are moving toward the goal of a completely clean business, a business with both volume and profits, as well as customer satisfaction.

Working in this direction, the National Association of Sales Finance Companies has decreed that terms on refrigerators, ranges, and water heaters be shortened from the prevailing period of 36 months to a maximum of 30 months; dishwashers, ironers, and washing machines from 36 to 24 months; radios and vacuum cleaners from 24 to 18 months; self-contained air-conditioning units, 30 months.

In every instance, a down payment of at least 10% of the retail price is required.

Instalment Sales Volume Is Not Increasing

One indication that shorter terms may not seriously affect appliance sales volume comes in the fact that instalment sales have not increased notably, despite the unusually attractive terms which have been offered in recent years.

Speaking before a meeting of the National Association of Sales Finance Companies at the Stevens hotel in Chicago last Thursday, President Henry Ittleson of the Commercial Investment Trust Corp. pointed out that instalment paper now out is less than the volume recorded in years immediately preceding the depression. It is considered anything but excessive.

Mr. Ittleson noted that the outstanding consumer instalment debt as of Dec. 31, 1936, is approximately two billion dollars, which is less than 3% of the estimated national income this year, and is less than 5% of the estimated retail sales for 1937.

Outstanding Time Paper Stays at Modest Figure

Furthermore, this debt of two billion dollars consists of approximately 10 million separate notes. The unpaid balance, averaging close to $200, is in the form of notes "given in partial payment for some family purchase, some family good, toward which every working member of the family normally contributes until the debt is liquidated.

Retail credit extended in 1936 was two billion dollars short of the 1929 volume. It is also reported that early estimates show a decline in instalment sales thus far in 1937.

Long Terms Have 'Nuisance Value' to Chiselers

Long terms are not desired by the average dealer because he thinks they will help him sell more appliances; rather, they are detested as a weapon with "nuisance value" to chiseling competitors.

Hence the recent decision of the companies which handle instalment paper to put terms on a more business-like basis is being welcomed by all and sundry in the appliance business.

Machines for The Salesman

ACCEPTED generally for a long time has been the dictum that mass production and advertising go hand-in-hand, that each makes the other possible and economical.

However, it has remained for Clark Wilmot, account executive for Brooke, Smith & French advertising agency, to state this theorem in dramatic terms which every salesman and dealer should well understand. Speaking before the first convention of Bendix home appliance distributors, Mr. Wilmot said:

"Machines increase the productivity of the worker; advertising increases the productivity of the retail salesman. Just as machines give the laborer a hundred hands, advertising lends the salesman a thousand voices. Were it not for advertising, the salesman could not keep pace with the laborer and warehouses would be glutted with unsold merchandise.

John Patterson Dictum In Mass Production

"Advertising is simply putting into mass production John Patterson's 'one best way of telling,' the so-called canned sales talk."

Sometimes dealers and salesmen are inclined to begrudge the tremendous amounts of money which their factories spend on national advertising. They would rather see it returned to them in the form of longer discounts, or bigger commissions.

Advertising Reduces Number Of First Calls on Prospects

But every salesman who has ever borne a grudge of this nature in the back of his mind should be able to see the point of Mr. Wilmot's elucidation.

Advertising gives the salesman "a thousand voices." It carries his story into homes at ridiculously low cost per call, thus helping him over the first and biggest hurdle, that of getting inside the door. Advertising reduces the number of calls necessary to sell the prospect—thus saving his time and increasing his productivity—by doing his "pre-approach and "approach" for him.

LETTERS

Specifications of Air Conditioners

Robert T. Gidley
Architect
3637 Maplewood Ave., Dallas

Editor:

Do you have a copy of ELECTRIC REFRIGERATION NEWS giving specifications of air-conditioning equipment available, and if so, what is the price? I know that you usually bring out such an issue early each summer. I am not interested in electric refrigerators but in air conditioning only. However, if it is impossible to get these specifications separately I would have to buy them together. I am interested in air-conditioning equipment of all types and I am particularly interested in the small, room-size conditioners.

Also will you please give me the address of the Air Conditioning Manufacturers Association so that I may get in touch with them in the matter of getting price lists.

R. T. GIDLEY.

Answer: Specifications on summer and winter air-conditioning equipment were published in the July 29, 1936 issue of ELECTRIC REFRIGERATION NEWS. Price of this issue is 25 cents per copy. Specifications for this year have not been issued.

The Air Conditioning Manufacturers Association headquarters are at 915 Southern Bldg., Washington, D. C.

Bound Volumes of The News

United Supply Co.
207 N. 16th St.
Omaha, Neb.

Editor:

We have kept copies of AIR CONDITIONING AND REFRIGERATION NEWS in the binder which you people sell. We are wondering what kind of a proposition you have on binding these up in a permanent binder. Would appreciate hearing from you regarding the same.

AUSTIN JONES, Sales Mgr.

Answer: You may obtain permanently bound copies of AIR CONDITIONING AND REFRIGERATION NEWS in the form of bound volumes with either paper board or cloth and leather covers. Each volume contains issues for four months, volumes starting with the first issue of January, May, and September.

Paper bound volumes cost $3 each and cloth and leather $5. These prices are f.o.b. Detroit.

Distribution of Kilfrost in America

Master Machinery Ltd.
Igloo Building
103-111 Bathurst St.
Toronto, Can.

Editor:

We noticed in your issue of Sept. 1 that you had made an answer to an inquiry regarding Kilfrost, the English preparation for preventing formation of ice on refrigeration coils, giving as the distributor, B. Trudel & Co., Montreal. Our company here in Toronto is Canadian distributor for Kilfrost, and Armco International, New York City, is distributor for the United States. We thought that the correct information on this matter might be of interest to you.

G. M. MORRISON, Manager.

Jobber Wishes He Had Space in Red Book

Refrigeration Service, Inc.
3109 Beverly Boulevard
Los Angeles, Calif.
Sept. 30, 1937

Publisher:

The copies of the RED BOOK, about which you wrote me recently, arrived this morning and are being mailed out this afternoon.

The copy of the book addressed to us is the first one I have seen, and I feel that you are to be congratulated upon its appearance and value to those who are to receive it. I only wish our company could have afforded some space in this book, and hope that we may be able to purchase some in one of the future editions.

Should you wish to have us mail additional copies of these, please do not hesitate to send them along.

L. P. ROTH

Sears Roebuck Finds Red Book Useful

Sears, Roebuck & Co.
Chicago, Ill.
Sept. 30, 1937

Publisher:

We have received our copy of the 1937 RED BOOK and wish to thank you. This book is proving very helpful and interesting.

We would greatly appreciate receiving any additional literature that you may issue.

Mrs. H. R. OGRAM, Librarian.

Wants More Catalogs On Refrigeration

Russell W. Lewis
177 East 8th St.
Chillicothe, Ohio
Sept. 20, 1937

Dear Sirs:

Received my copy of RED BOOK. I think it is great. Will appreciate any further literature or catalogues, many thanks for the above.

R. W. LEWIS

Jobber Believes Red Book Policy Is Good

White & Shauger, Inc.
Plumbing, Heating, and Electrical Supplies, Refrigeration and Oil Burning Accessories
435-439 Straight St.
Patterson, N. J.

Editor:

We have just received your issue of MASTER CATALOG OF AIR CONDITIONING AND REFRIGERATION.

We believe your policy in hand is a good one. It will be mutual for the wholesaler, the manufacturer and yourselves.

We are now purchasing about 75% of our refrigeration supplies from manufacturing concerns as listed therein.

Your supplementary issues will be awaited with interest.

J. W. WHITE

Red Book Makes Catalogs Convenient

Warsaw Battery & Electric Service
108 S. Washington St.
Warsaw, Ind.
Sept. 23, 1937

Publisher:

I was more than pleased when I received my copy of the RED BOOK. I hope more manufacturers and distributors take to this method of placing their advertising in our hands. Such a convenient and appropriate form of receiving literature will save it from going to the waste basket with only a glance, when it should be saved, because it is never known when any particular item may be desired.

Also, since my last communication with you, I have gone in with my brother to form the above company.

You have done a great job on the NEWS this year. More success to you.

C. DEVOE LEEDY

Master Catalog Is Very Handy

Ed. Friedrich Incorporated
San Antonio, Tex.
Sept. 22, 1937

Publisher:

We just received a copy of your RED BOOK, MASTER CATALOG OF AIR CONDITIONING AND REFRIGERATION and I believe that this unit should be very handy in many respects—especially so after you have it more complete. By that I mean a greater number of different firms listed.

J. A. BRINKOETER,
Engineering *Dept.*

Step in the Right Direction

Harry F. Perissi
44 Whitehall St.
New York, N. Y.
Sept. 30, 1937

Publisher:

Thank you ever so much for sending me copy of the 1937 MASTER CATALOG, which I find not only well done, but very helpful. It is indeed a step in the right direction and as the opportunity is presented, I shall be pleased to put forward the suggestion you recomend when talking with suppliers. HARRY F. PERISSI

Fine Piece of Work

Anderson Show Case Mfg. Co.
321 N. E. Filmore St.
Minneapolis, Minn.
Sept. 17, 1937

Publisher:

We received your 1937 MASTER CATALOG, RED BOOK. This sure is a fine piece of work, we appreciate you sending us one. Thank you.

A. E. ANDERSON

Institute Congratulates French Edition Plans

Institut International du Froid
9, Avenue Carnot
Paris, France
Sept. 23, 1937

Publisher:

During the absence of Dr. Maurice Piettre, who is at present in the States at the Food Conference of the Massachusetts Institute of Technology, we beg to acknowledge receipt of:

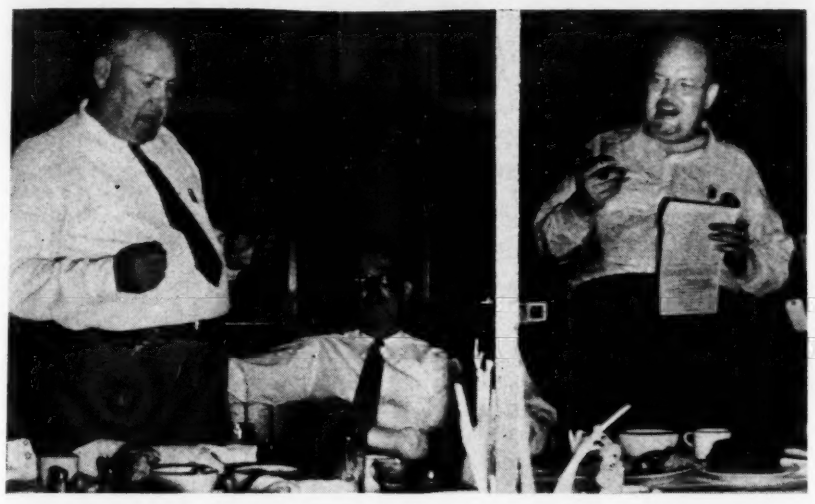
A set of Master Service Manuals Nos. 1, 2 and 3 on household refrigeration;

A copy of Master Service Manual No. C-1, the first in a series on commercial refrigeration.

We are very interested in observing the development of your endeavors in bringing out a French Edition and an "International Edition" of your Master Service Manuals on commercial refrigeration. May we express our congratulations upon this initiative which will usefully add to literature on refrigeration matters.

Dr. H. H. MOOY, Chief Editor.

At Baker Ice Machine's Get-Together



Dick Baker (left) and Harry Koontz, purchasing agent, were impromptu speakers at the recent annual Baker Ice Machine Co. golf tournament dinner. Austin Jones of the United Supply Co., Omaha, was the candid cameraman who took these pictures.

Bobo, Miss. Market for Refrigerators, Ranges Is 100% Saturated

JACKSON, Miss.—The sales manager's dream for every product, 100% saturation, has been achieved by both electric ranges and refrigerators in one town and by refrigerators alone in a second served by the Mississippi Power & Light Co.

Sale of an electric range last week brought 100% range and refrigerator saturation to Bobo, Miss., a town on Mississippi Power line. Sherard, another small town in Mississippi, is 100% saturated on refrigerators—and salesmen are now working to equal Bobo's record on ranges.

Beck & Gregg Adds Three Dealer Salesmen

ATLANTA—Beck & Gregg Hardware Co., Crosley distributor, has expanded its sales organization by adding three specialty salesmen who will sell lines previously sold by the company's general salesmen.

Special representatives, trained in radio and appliance sales promotion, include: J. Q. Forrester, covering north Georgia, George T. Laney, covering east Georgia, and James C. Jenkins, covering south Georgia.

The new men will assist dealers in planning campaigns, training personnel, and will work with them to develop a greater sales volume, reports J. F. Gordy, manager of the radio-appliance division.

Hamady Is Mich. Distributor For Invisible Kitchens

FLINT, Mich. — Hamady Hardware & Appliance Stores has been appointed distributor in the eastern half of Michigan, including Detroit, for the line of invisible kitchens and bar-ettes manufactured by Electric Invisible Kitchen Co., Chicago.

The Hamady firm already has opened one appliance store here and has completed plans for three similar stores throughout the eastern part of the state, as well as for a new sales organization and a complete display room in Detroit.

Portsmouth, N. H. Model Home Is Opened

PORTSMOUTH, N. H.—The New Hampshire Gas & Electric Co., of Portsmouth and Newmarket; the Derry Electric Co., of Derry and East Jaffrey; the Fred L. Wood Co., of Portsmouth; and the New Hampshire Air Conditioning Co. combined to install an electric kitchen, plumbing and heating, and air conditioning in Portsmouth's new model home, which was recently opened to the public.

Methods of Controlling Time Sales Outlined By Credit Manager

NEW YORK CITY—Three rules for keeping the granting of credit on a sound basis and avoiding the after-effects of runaway credit at some distant date were laid down to members of the Metropolitan Controllers' Association on Sept. 23 by A. B. Buckeridge, executive manager of the Credit Bureau of New York, Inc.

He urged retailers in permitting purchases on credit to do these things:

1. Sell merchandise, not terms.
2. Don't compete on terms.
3. Whatever plan is selected, get a down payment sufficient to bind the sale; follow up collections promptly; don't sell to credit "underweights," and don't let terms be carried so far that they have to be carried to fulfillment by the next generation.

LIBERAL CREDIT POLICY

A store should have a liberal credit policy so as to facilitate buying by the public, Mr. Buckeridge declared—but a liberal credit policy does not mean the sanctioning of policies which may prove injurious to the customer himself, may later prove troublesome for the store, or lead to heavy bad debt losses.

"Credit should be extended today in the same manner as prior to the depression," he said. "Have a liberal credit policy, but counterbalance it with a close collection policy.

"The main contention of credit managers throughout the country is that terms should be based on the life of the merchandise. Where an article is out of date six months and the terms are 12, the customer loses all interest after the six months in making payments."

COLLECTION PERCENTAGE HIGH

In permitting the granting of easy credit, retailers should not be misled by the fact that collection percentages are at a high peak today, according to Mr. Buckeridge.

"We are on a wave of prompt payment that has about reached its peak. For the past several months there has been an indication that the consistent increases in percentages will not be maintained much longer. They will, however, maintain a high level until a falling off in business, war scare, higher taxes, the over-extension of credit or other causes tighten up the pocket-books of the charge brigade.

"The present station of high collection percentages and low collection losses may mislead us into thinking that such a state of affairs will continue forever. If we go on lowering down payments and lengthening terms, we may over-sell the present goods risks or take on a type which is not capable of paying promptly."

New Jersey League To Meet Oct. 9

ATLANTIC CITY, N. J. — Annual convention of the New Jersey Council of Electrical Leagues to be held at the Hotel Traymore here Oct. 9 and 10 will be attended by maintenance engineers, contractors, manufacturers' and wholesale distributor representatives, electric household appliance dealers, and utility executives.

Slated speakers for the first day's divisional discussions on lighting market development and merchandising are Henry G. Clum, Edward J. White, and Lee Williams.

Richard H. Osgood of Newark, president of the Essex Electrical League, is directing convention arrangements.

Heilmann & Bryant Made Detrola District Heads

DETROIT — Otto Heilmann and Earl F. Bryant have been appointed district managers in the St. Louis and Denver territories for Detrola Corp., radio and refrigerator manufacturer here, according to Horace H. Silliman, director of sales.

Mr. Heilmann was previously affiliated with the United American Bosch Corp. He traveled for this company during the past three years in the St. Louis territory, and in the eastern half of Missouri and southern Illinois.

Mr. Bryant, who also was associated with the American Bosch Corp., traveled in the firm's western territory.

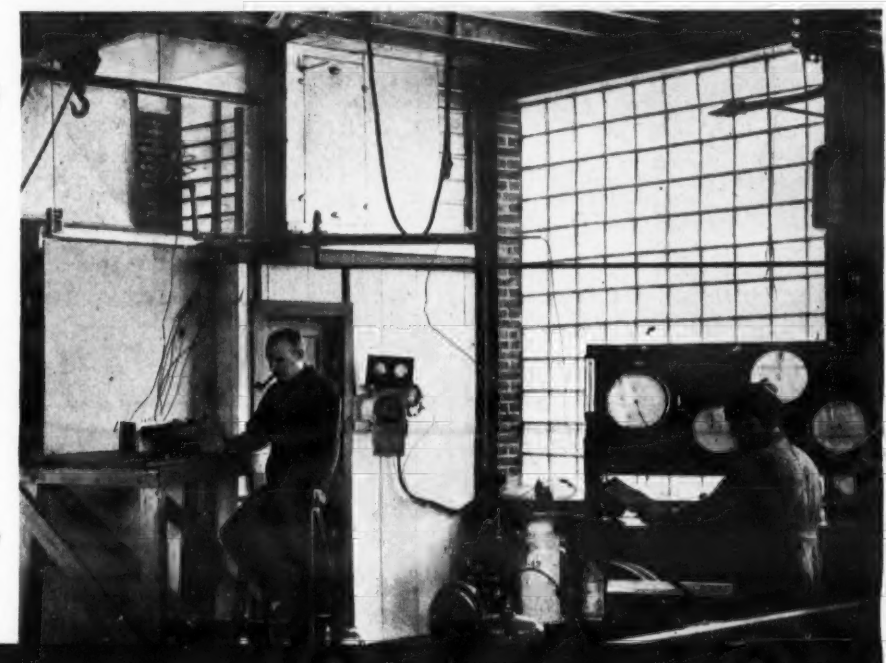
● Sales resistance to new equipment, on the part of the tavern keeper, evaporates when he tries beer cooled by the Temprite. • The perfect cooling, regardless of weather or amount drawn—the correct collar—the complete elimination of waste from suds down the drain—are most convincing. • Temprite Portable Demonstrator can be rolled in to the bar—is ready to serve beer in a minute—enables you to sell the easiest, most effective way—by actual demonstration. • Write for Bulletin B-1.

TEMPRITE PRODUCTS CORPORATION
1349 East Milwaukee Avenue • Detroit, Mich.
ORIGINATORS OF INSTANTANEOUS LIQUID COOLING DEVICES

"Distribution Check"

"PASS NUMBER"

"One 38.9°"
"Two 39.0°"
"Three 38.95°"
"Four 38.85°"
"Five 38.8°"
"Six 38.9°"



and Another ALCO TEST OF EVAPORATOR EFFICIENCY IS UNDER WAY . . . . . .

REFRIGERANT CONTROL, under varying load conditions, is checked every hour for weeks—every 15 minutes for days—every 5 minutes for hours—to find the consistency of operation, and the proper valve application.

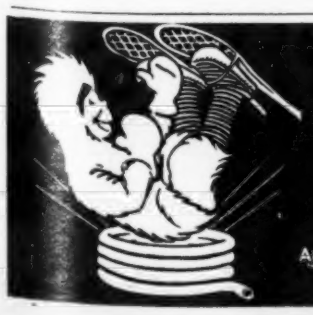
The liquid and suction lines are tested for size and arrangement—the efficiency of the distributor header checked—suction manifolds and remote bulb applications compared and arranged for the most efficient control. The ALCO engineering department has tested over 200 types and styles of evaporators and coolers. Frequently their efficiency and capacity has been improved—as much as 25 to 100%.

The results of these tests have furnished the data needed to determine the correct THERMO Valve application. Every ALCO Engineer and Field Representative has an accurate knowledge of the characteristics of most standard evaporators.

Take advantage of their experience and information—both laboratory and field—

Consult an **ALCO** *Engineer for Engineered Refrigerant Control.*

ALCO VALVE CO., INC.
2620 Big Bend Blvd. St. Louis, Mo.



Anaconda Copper
REFRIGERATION TUBES
Unusually Soft!
THE AMERICAN BRASS CO.
FRENCH SMALL TUBE Branch
General Offices: Waterbury, Conn.
ANACONDA

SELLING AIR CONDITIONING

Kansas City Firm Follows Tested Appliance Distributing Ideas In Air-Conditioning Field

KANSAS CITY—In the office of Harold W. Falls, manager of the Kelvinator air-conditioning department of the Richards & Conover Hardware Co., distributor in western Missouri, Kansas, and Oklahoma, hangs a motto that just about sums up the department's business philosophy.

The motto is: "The bee that gets the honey doesn't hang around the hive."

What the motto should add, to be a working slogan for the Rich-Con air-conditioning department, is that getting the honey is just the start of the job . . . it shouldn't be sought from flowers so rare that its cost is higher than its market value, and it should fill the honeycomb nicely and have wax enough around it to keep it for a long time.

PROPER ENGINEERING

In Mr. Falls' words, "Getting the business is important, but it's just as important to engineer the job properly and price it so that both you and the customer are satisfied . . . he with his installation, and you with your profit on the job."

Air conditioning is a comparatively new venture for Richards & Conover, but the company has been in the hardware and building supply field since 1857, and is well and favorably known to business men and others in the territory it covers.

This fact has been an important factor in Rich-Con's success in the air-conditioning field, and Mr. Falls is the first to admit it.

NAME WELL KNOWN

"Our business associations, formed by the company over a long period of time, bring us into contact w. commercial air-conditioning prospects we might otherwise never hear about," he says.

"The Rich-Con name is well known —our reputation for fair dealing has been built up solidly—and people who have done business with us in the past to their satisfaction usually come back when they want something else that we have to sell.

"That is true of hardware and building supplies—it's also true of air conditioning. Without the Rich-Con name behind us, it's hard telling just what problems we might have had to overcome."

With its headquarters in Kansas City, Rich-Con operates branch offices in Wichita and Salina, Kan., and Tulsa and Oklahoma City, Okla. The air-conditioning department has representatives in all the company's branch offices.

KANSAS CITY LARGEST

Largest department is in Kansas City, where eight salesmen, two sales supervisors, and three engineers are on the regular staff. In Wichita, the next largest territory, the Rich-Con organization maintains four salesmen, one supervisor, and an engineer; in Salina, a sales engineer handles the whole works; in Tulsa there are three salesmen and a supervisor; and the Oklahoma City office is staffed by four salesmen and a supervisor-engineer.

All Rich-Con air-conditioning salesmen start in on a four-week probationary period; if they stand the gaff through that trying time they're apt to develop into fairly good producers, Mr. Falls has found.

JUDGING NEW MEN

"We can usually tell, within a month, what chances a new man has of succeeding with us as an air-conditioning salesman," Mr. Falls says. "If we see he's not going to do justice to the job or to himself, we tell him so. Some newcomers get discouraged before their probation period is up, and leave of their own accord. It's a kind of work not everybody can do well."

While the salesmen are on probation, and after they've become full-fledged Rich-Con air-conditioning men, they are placed on a drawing account of from $15 to $25 a week, against which their commissions apply.

COMMISSION SCALE

These commissions are on a sliding scale, dependent more on the way the job is sold than what its actual selling price (in dollar volume) may be. Here's how the scale runs:

For jobs sold at list price, the commission is 15%; if the salesman has to sell at 10% off, his commission drops to 12%; if he drops his price to 20% off, his commission comes down to 10%. On jobs sold at more than 20% off list, the sales commission is 7%.

There's a motive back of the scale. It gets the Rich-Con salesman "in business" with the company—if he sells the job at more profit to Rich-Con, he makes more; if he cuts the price, his commission suffers not only a drop in dollars, but in percentage as well.

PRICE LAST CONSIDERATION

As a result, he's likely to talk quality, correct engineering, profit to the business man—almost everything else, in fact—before he tries to land the job with the price wedge. And that's exactly what the Rich-Con heads want him to do. It's money out of his own pocket if he doesn't.

So the company's sales budget depends in general on the number of jobs sold, and the prices at which the salesmen sell them. Sales supervision, however, is figured on the Rich-Con budget at between 5 and 7½%. Usually it will scrape the top of this estimate rather than the bottom, Mr. Falls finds.

SALARY FOR SUPERVISORS

Supervisors are on a salary, which is figured against a predetermined dollar volume quota anticipated in the territories they cover. If the supervisor in any territory makes his quota, he will meet the salary costs fixed by the company. After the quota is reached, the supervisor gets a bonus on all sales made in his territory—his reward for bringing in "plus" business.

All of the company's six engineers are on salaries—and engineering costs mount up to about 12½%. Kansas City especially is a red hot air-conditioning territory, and competition is keen—resulting in a large ratio of estimates to actual number of contracts signed. That keeps engineering expenses high—and a Rich-Con survey and estimate is just about as thorough as any you'll run on to.

This 12½% is added to the cost of all air-conditioning contracts landed by the company. It is an addition to the company's regular mark-up on jobs, which is figured to cover everything but this item.

Sales promotion expense comes in the Rich-Con air-conditioning budget at from 3 to 4%—and this, again, is lower than it would be if the department were not a part of the larger organization, Mr. Falls points out. The Rich-Con name itself is a good sales promoter, he declares—it already means something in its territory, and so there's no need to spend money selling it; you can concentrate on the product.

No provision is made in the department's budget for general overhead, since this again is something that is absorbed by the larger parts of the Rich-Con organization.

The company's mark-up practice is largely determined by two factors: the size of the job, and competition.

ADD ENGINEERING COST

On "package" merchandise—room coolers—the company's practice is to charge cost plus freight, doubled. The "cost" figure represents actual factory cost plus a mark-up of from 5 to 7% as a safety factor.

On major air-conditioning installations — construction-type jobs — the company's mark-up ranges from 40 to 33⅓%, depending on the actual size of the job, construction or operating features involved (or expected), and how strong competition is for that particular installation.

'PACKAGE' MERCHANDISE

Out of the mark-up comes sales and supervisory expense, general overhead, advertising and sales promotion, profit—everything but engineering expense. And as stated previously, the company adds 12½% to cover that item.

Of his eight Kansas City salesmen —Mr. Falls says they're apt to have come from almost anywhere, that there's no set rule by which you can judge their probable values beforehand. In general, though, his best producers are products of Kansas City night school training.

One of the salesmen is "self-trained," and worked up from the Rich-Con service department. Two of the men formerly sold school supplies; one has a father who manufactures furnaces; another, who works the "class" field, formerly was a Cadillac automobile salesman. The others had previous experience in commercial refrigeration selling, with Rich-Con and other companies.

ALL PROPOSALS CHECKED

"Our salesmen needn't be engineers, nor have an engineering background, to succeed for us," Mr. Falls says. "Every proposal we send out is signed and approved before it is given to the salesman. One of our engineers takes a job and checks it through, from beginning to end."

And that isn't all. On jobs which might present special operating problems or involve added heat or light loads not accounted for in the original estimate, Mr. Falls or one of his engineers makes a call "on location" while the installation is in progress, just as final check-up and precautionary measure.

Mr. Falls had made such a call on a job which Rich-Con was putting in at Lee's Summitt, Mo., and recalled the incident:

The air conditioning was part of a restaurant remodeling job, and his inspection had revealed that in addition to the anticipated heat load from steam tables, grills, and coffee urns, an unanticipated load would result from extra-heavy interior and show-window lighting. This meant an extra strain on the conditioning system.

To relieve this as much as possible, he had suggested to the builder

(Concluded on Page 17, Column 1)

Learning New Tricks from An Old Hand at the Game

In this, the fourth of a series of interviews with firms that have made a success in the distribution of air-conditioning equipment, is told the story of Richards & Conover, an old-established Kansas City wholesale hardware firm that graduated into the electrical appliance field and eventually into air conditioning.

Long years of experience in meeting merchandising problems have helped this firm to make its way successfully in air conditioning; other dealers will find interesting the Richards & Conover sliding scale of commissions for salesmen, the way mark-ups are graded by types of jobs, the manner in which the firm has built its air-conditioning sales and service personnel.

While these interviews with air-conditioning dealers who are operating profitably run somewhat to the "long" side in terms of reading time, the editors believe that by publishing the series at this particular time, which is "between seasons" in air conditioning, readers will have the opportunity of digesting the information provided, and making use of it in their planning for the coming year.

THE Hill REACH-IN REFRIGERATOR

Made Especially for HOT KITCHENS

Here is a box with heavier insulation, to keep down operating costs; all-porcelain exterior and interior, to withstand hard usage; better refrigeration, to prevent spoiling and drying; and many other features.

• Send for complete illustrated 32-page catalog using business letterhead

HILL PRODUCTS DIVISION
C. V. HILL & CO., INC., TRENTON, N. J.

TAG Snapon Controls FOR REPLACEMENT profits

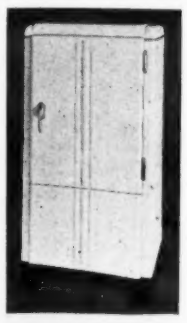
TAG Snapon Controls with overload protection provide the essential element of dependability that you need in the profitable servicing of Domestic Refrigerators, Water Coolers and Beverage Coolers. Once adjusted, they permanently retain their temperature setting. Once set, the mechanism is locked against creeping. Send for your FREE copy of the TAG Catalog No. 1136-25 which describes these profit making Controls and other Test Equipment for Refrigerator Service.

CONSULT YOUR JOBBER ABOUT TAG CONTROLS AND TEST EQUIPMENT

C. J. TAGLIABUE MFG. CO. 550 PARK-AVE-BKLYN-N.Y.

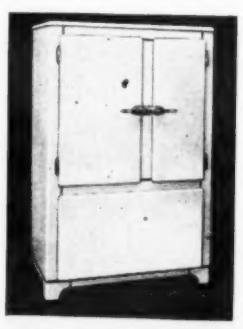
DOMESTIC and COMMERCIAL CABINETS
"Built by Midwest"

Midwest offers the most complete line of high grade Refrigerator Cabinets in the United States - - - models from 4 to 66 cu. ft. capacity - - - quality built - - - reasonably priced. Orders shipped the same day received on stock models. (Factory located on main line of Sante Fe and Burlington.) Write or wire for prices and discounts.



Domestic models have all-steel construction, Bonderized Armco metal—Dulux exterior finish—porcelain interior—Balsam Wool insulation—streamlined styling . . . and many sales-getting accessory features.

4, 5, 6, 8 Cu. Ft.



11, 13, 16½ Cu. Ft.

Commercial models furnished with porcelain, Dulux or stainless steel exterior—porcelain or Dulux interior — full-length meat doors, or glass doors — all models furnished with or without coils (2-door models with ice cube evaporators).

22, 25, 27, 44, 66 Cu. Ft.

MIDWEST STAMPING & ENAMELING COMPANY
GALESBURG, ILLINOIS

Check-up During Installation Period Is Precaution that Pays Richards & Conover

(Concluded from Page 16, Column 5)

that louvers be placed at the tops of the windows, to dissipate most of this heat load to the outside. The builder accepted the suggestion, and what might otherwise have been an unsatisfactory installation was set right.

CHECK BACK ON JOBS

Precautions like this take time and trouble—but if they make the customer, contractor, or builder realize that Rich-Con is just as interested as he is in the successful operation of that job, they're worth every minute they cost, Mr. Falls believes.

"It pays to check back on jobs during installation, particularly if the air conditioning is part of a general modernization program, to look for angles just like the one we caught at Lee's Summitt," he says. "It's the little things, overlooked by buyer, salesman, and designer, that often throw the whole system out of balance.

SATISFACTORY OPERATION

"If you can catch all these angles before the job is put into operation, you can save both yourself and the buyer a lot of grief later on.

"The job **must** operate satisfactorily—that's one requirement you can't side-step. The buyer will usually meet you half-way if you recommend changes in equipment or layout before the job is done. After it's operating, though, it's **your** baby—and if you have to add equipment to bring the job up to standard, it's money out of your pocket, not the buyer's."

Rich-Con air-conditioning salesmen are given regular training classes all the while they're with the company. Sales schools are held three mornings a week, from 7 to 8 o'clock. Norman Wilson, Rich-Con's personnel manager, conducts the schools, at which regular attendance is required.

At their meetings, the men study factory-recommended sales methods, and pick up additional selling slants from the experiences of their fellow-workers. The meetings are quite informal and are designed to be an inspirational shot-in-the-arm for their day's work—and to get them out in the field early in the day.

SALESMEN TRAINING

Sales floor work is rotated among the eight men. At present, walk-in prospects aren't plentiful enough to make this part of the job a bonus "soft touch" for deserving producers, so it's a routine procedure.

Greatest help in securing prospects for air conditioning, Mr. Falls says, is the Rich-Con reputation, the connections the company has made in its many years in business, and the good-will recommendations of users of jobs which the company has installed.

All the company's business connections help the air-conditioning department. Inter-office leads have been a major factor in building a live and lucrative prospect list; business houses which have been buying from Rich-Con for years, and those companies from which the company buys its own supplies, usually give the company the inside track on air-conditioning jobs which they are thinking about.

Only canvassing done by the department is of Kansas City business houses, to give them the "profit story" of air conditioning.

ROTATE FLOOR WORK

This "profit story" is a part of every air-conditioning survey made by Rich-Con of commercial prospects. It's the most powerful argument you can use, Mr. Falls believes. Showing the business man how air conditioning more than pays for itself—in more customers, extra sales, bigger meals, less time off by employes because of illness—and showing it to him through the actual dollars-and-cents experience of other business men . . . you can't ask for a more convincing story than that, he says.

Price is still a sticker, Mr. Falls finds. The average person hasn't any concept of the cost of an air-conditioning system. After they've used it a while, they all say it's worth the price, but it isn't an easy task to convince them of that beforehand. Press of competition, and experience of others in their business line, still is the most potent sales lever.

'PROFIT STORY' IN SURVEY

Letters from satisfied users, Mr. Falls has found, do about as much as anything to break down sales and price resistance. Especially is this true if the "booster" letter is from a large company.

Mimeographed copies of letters like the following, from C. T. Thompson, president of Thompson-Hayward Chemical Co., are in every Rich-Con man's portfolio:

"While the Kelvinator air-conditioning unit isn't entirely completed, it is working so satisfactorily that I can't help but write and tell you of the pleasure that has been expressed by our office organization over this installation.

LETTERS BREAK RESISTANCE

"Never have I known of anything that seems to have met with such universal approval, and I have noted with amazement, over the fourth of July holiday period, how many came down to the office to work because it was more comfortable in the office than it was being around out of doors, and the same condition prevails during the evening.

"If this extra energy to work, together with the greater satisfaction in their work, keeps up, I am sure it has been one of the most profitable investments we have ever made . . ."

ADVERTISING PROGRAM

Most of Rich-Con's advertising is direct mail and local newspaper and magazine insertions. Two local trade magazines, covering the restaurant and hotel fields, are used regularly by the company. Local newspaper space is used occasionally, without a set schedule.

The advertising program is worked out by Mr. Falls, and is in direct proportion to the amount of business which the company is doing. If business is better than anticipated, more advertising is used; if it falls off, so does advertising expenditure.

Nearly all sales are made on the time-payment plan. The company has no definite down-payment rules on instalment purchases, but it's a play-safe policy to get as large a down payment as possible, Mr. Falls says. In most cases, the down payment will be about 20%.

TIME PAYMENTS

Major factor influencing the company's time-payment policy is the credit standing of the purchaser. Old established companies can arrange payments just about to suit themselves; small business men, whose credit isn't as sound as it might be, may be asked to arrange payments to suit the Rich-Con credit heads.

In most cases, however, it hasn't been necessary to ask customers for a definite payment, because they make the first move toward setting up an instalment schedule themselves.

On all sub-contracted work (electrical, duct, and plumbing work), the company's practice is to ask the customer for cash enough to cover this part of the job. Reason for this is that sub-contractors usually demand cash for their work, and by obtaining it straight from the customer Rich-Con avoids having additional money tied up in the transaction for materials and labor which it did not directly furnish.

The company handles all installation work itself, except in cases in which union labor is required. Then union workmen are hired, and are supervised by one of the company's own installation experts.

27 SERVICE MEN

In its five branches, Rich-Con employs 27 service men. Sixteen of these men are in Kansas City headquarters, three in Wichita, one in Salina, two in Tulsa, and five in Oklahoma City branch offices.

All service men are trained by the company. Rich-Con's service supervisor conducts his own training schools regularly; he, of course, has been factory-trained. Most of the service men are old-timers, in point of experience; all of them have worked up through household and commercial refrigeration. The men who make the best showing for the company in these two fields are moved up to the air-conditioning service department.

On major air-conditioning jobs, the company usually sub-lets the electrical, duct, and plumbing work. Estimates are first obtained from sub-contractors, and quotations are made to the customer—as a separate item—after these bids are received.

SUB-LET DUCTWORK

On all sub-let contracts, the company takes a mark-up, adding it to the original bid submitted by the sub-contractor before passing it on to the purchaser. This mark-up is more of a safety factor than anything else, but it is also a guard against later shaving of the overall profit on the transaction.

The company gives a one-year service guarantee on all jobs it sells, and has set up a service reserve to cover anticipated servicing costs. This reserve, which amounts to 5% of the cost of the equipment, is listed as a separate item on the final bid and estimate made to the customer.

2 Mass. Dept. Stores Install Air Conditioners

NEWBURYPORT, Mass. — Joining the trend towards modern merchandising methods, two department stores here, H. W. Pray & Co., and Kray's, have installed year-around air-conditioning systems.

General Electric equipment, consisting of a 10-ton system with a 5-hp. blower fan, was installed in the H. W. Pray & Co. store by the Lawton Engineering Co. Other modern notes in this store include a lighting system employing Holophane built-in control lens units and lumiline lamps.

Frigidaire air-conditioning equipment is installed in Kray's. A 5-ton compressor and 2-hp. blower fan circulate the air throughout the store through concealed ducts. Modern lighting in this store was planned and installed by the Grand Rapids Store Equipment Co.

8-Month Household Sales 315,000 over '36 Period

(Concluded from Page 1, Column 3)

mates by AIR CONDITIONING AND REFRIGERATION NEWS.

The former high sales mark for August, 120,700 units, had been established in 1935. Last year's August world total was 117,900 units.

Sales by 15 reporting member companies of National Electrical Manufacturers Association (Nema) also set a new all-time high record for August, totaling 126,028 units. The previous high total for Nema sales also had been set in August of 1935, with 109,834 units.

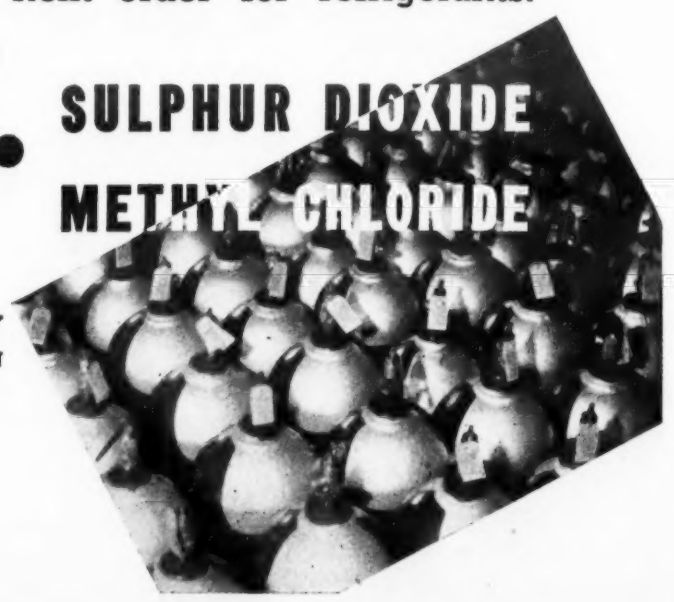
This year's world household refrigerator sales estimate, through August, shows an increase of 315,000 units over comparable figures for the same period of last year, when world sales were estimated at 1,856,000 units.

World sales of commercial refrigeration equipment reported by 15 member companies of Nema's commercial refrigeration section dropped to 14,114 units during August, compared with 17,726 units for the same month last year.

A large seasonal drop was shown in sales of self-contained air conditioners. World sales during August reported by Nema manufacturers to distributors and dealers totaled but 61 units, compared with 1,000 during July, the last "hot month" for that item.

Do not ask for just any refrigerant, not questioning its merits. There is a difference in refrigerants, as you will quickly learn the first time you specify Ansul. The individual analysis tag on every cylinder is just one of the many extra steps in manufacture that Ansul employs to protect that plus quality and plus satisfaction that users have come to expect from Ansul Sulphur Dioxide and Ansul Methyl Chloride. • Choose blindly no longer. Specify Ansul on your next order for refrigerants.

Ansul • SULPHUR DIOXIDE METHYL CHLORIDE



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Copper Tubing

Every coil of WOLVERINE Copper Tubing is deoxidized, dehydrated, solder sealed, wrapped. Delivered to you absolutely CLEAN

Ask your jobber about WOLVERINE TUBING

WOLVERINE TUBE COMPANY
1411 CENTRAL, DETROIT

AIR CONDITIONING

Baker Tells Why Air Conditioning Is Profitable Equipment for Use In Modern Bakery

LOS ANGELES—Said to be the first complete air-conditioning system involving all-year temperature and humidity control to be installed in a bakery is the installation now in operation in Helms Bakery here.

Although bakeries have lagged behind certain other industries in air conditioning for control of process and comfort, air conditioning is declared by many engineers to be of more actual benefit to bread making processes than to some of the other processes for which acceptance of air conditioning is of long standing.

Many bakeries use humidifiers to control the humidity and temperature, and to wash the air entering the dough raising rooms. Air entering the steam proofing rooms is also often washed as well as being controlled for temperature and humidity. These points, however, are about the only ones where a large-scale advance has been made in the field of air conditioning bakeries.

AIR INGREDIENT OF BREAD

Yet bread is one of the few products in which air is actually an ingredient used in making the product.

The following points outlined by Paul H. Helms, president and general manager of Helms Bakery, should be of assistance to the air-conditioning salesman in selling prospective users in the bakery field on the advantages of air conditioning, as they show valuable complete air conditioning may be to the baker.

"From the production standpoint," declared Mr. Holms, "positive control of bread coolers is perhaps the most important utilization of air conditioning. In large bakeries, the bread is discharged from a traveling oven and goes onto a traveling carrier which takes the loaves to a cooler where a metal arm automatically pushes them on a shelf in the cooler.

CONTROL SOFTNESS OF BREAD

"This shelf carries them to the top of the cooler, and makes several trips back and forth the length of the cooler, when the loaves are again placed automatically on an under arm belt and carried up to the sorting tables and wrapping machines.

"If the temperature and humidity of the cooler are regulated," explained Mr. Helms, "the baker can control the softness or hardness of his loaves. Our customers, for example, like a solid crusty loaf, and since some of the bread had been coming soft out of the cooler we decided to install air conditioning as it was important to eliminate this condition in order to satisfy customers.

DOUGH-MAKING OPERATION

"The operation of dough-making is, briefly, as follows: flour is lifted by conveyors, resifted, and dumped into automatic scales. The correct weight is then dumped into mixers and other ingredients are weighed out and put into the mixer which is then closed.

"After mixing, the dough is discharged into long troughs for development. Since there are bound to be some dust particles enter the mix as the flour is dumped and ingredients added, air conditioning the bakery means closer control over this factor."

Increased comfort of employes and their better health, is said to be another factor making air conditioning important to the bakery. It is pointed out that bakery work is likely to be somewhat enervating, due to the heat and shifts in temperature as ovens are turned on and off. This means that the common cold and other such afflictions have a higher incidence among bakery employes, with a consequent loss of vigor in application to the job, and sometimes a sharp reduction in employe's working hours.

ELIMINATES SPOILAGE

Mr. Helms further explained that establishing humidity and temperature control in storage rooms is a step toward eliminating some shrinkage and spoilage for the bakery. For the baker using air conditioning can purchase miscellaneous ingredients, raisins, nuts, etc., in larger quantities, taking advantage of market conditions more readily because he can hold materials until needed.

Since the price of ingredients is an important part of the selling prices of bakery goods, it is obvious that air conditioning helps to cut production costs.

INSTALLATION COSTS $100,000

The installation at Helms Bakery cost approximately $100,000. It furnishes 100,000 cu. ft. of air per minute, and a temperature of 80° with 50% relative humidity is guaranteed. The central conditioning system uses 260 tons of refrigeration.

There are two bread coolers, each of which is served by a separate unit. In addition, there is an air-conditioning unit for the offices and one for the bakery proper.

The humidifiers of the dough raising room and of the steam proofing rooms had been installed for some time, and are not included in the present installation.

One feature of this installation was installation of ducts and fans above the traveling oven to exhaust 4,000 cu. ft. of air per minute. With this arrangement, the air from warmer points is not drawn into the circulation system, but is thrown outside.

Conditioner Suspended Under Stage Floor

ATLANTA — Because restricted space presented a problem, the unit of the Westinghouse air-conditioning system installed in the Center theater here by Randall Bros., distributor, had to be mounted against the lower side of the stage floor on an angle-iron rack.

The space was excavated and the unit suspended; the two compressors are located directly beneath the unit, with the evaporative condensers in the front of the compressors. Supply grilles are located directly above the stage opening and are delivering air at a distance of 91 feet.

The system is a complete modulating system without any summer-winter change-over mechanism, because even during the winter months heat is required part of the day and cooling part of the day.

Claimed to be one of the most modern theaters in the south, the show house has a seating capacity of 500. Remodeled in 1934, the theater was equipped with a washer air system. The system did not prove satisfactory and Louis S. Bach, manager of the theater, ordered a Westinghouse installation.

400 Business Men View Air-Conditioning Plant In Gimbel's Store

PHILADELPHIA—More than 400 engineers, architects, and business men attended the dinner sponsored by the air-conditioning division of the Electrical Association of Philadelphia to inspect the large air-conditioning installation recently completed at Gimbel Brothers' store, 9th and Market St. here.

The Gimbel air-conditioning system, which cost approximately half a million dollars, is the largest of its type installed in the United States this year. The installation air conditions 350,000 sq. ft. of floor space, including all or part of five floors of the building. Carrier equipment is used.

Refrigerating capacity of the system is 1,200 tons, utilizing two centrifugal refrigerating machines of 850 and 350 tons respectively. A total of eight dehumidifiers is used, six located in the sub-basements and one each on the third and seventh floors.

George R. Conover, managing director of The Electrical Association, presided and introduced the speakers at the dinner. Speakers included Ellis A. Gimbel, chairman of the board, Gimbel Brothers, Inc.; Arthur C. Kaufmann, vice president and executive head of Gimbel Brothers; Charles S. Leopold, consulting engineer who designed and supervised the installation; and George E. Whitwell, vice president in charge of sales, Philadelphia Electric Co.

Following the talks, those present were divided into groups of 20 and conducted by guides to inspect the entire system.

Attendance at the dinner included members of The Electrical Association of Philadelphia; the Philadelphia section of the American Institute of Architects; and the local section of American Society of Heating and Ventilating Engineers, American Society of Refrigerating Engineers, Building Owners and Managers Association, and Merchants' Association.

Mueller Furnace Co. Adds 2 Eastern Branches

PHILADELPHIA—J. G. Werner has been appointed branch manager for the L. J. Mueller Furnace Co., Milwaukee, with offices at Delaware & Morris Streets, Philadelphia. Mr. Werner's quarters provide space for complete warehouse stocks of air-conditioning equipment, pipes, fittings, registers, and coal, oil, and gas furnaces.

A similar branch office has been established at 405 W. Warrington Ave., Pittsburgh, with Karl E. Kahley in charge.

The Mueller Furnace Co.'s eastern headquarters offices have been moved to larger and more convenient quarters in the Candler Bldg., 123 Market Place, Baltimore. C. L. Hewitt, Jr., eastern sales manager, reports that not only local service will be handled from this warehouse, but also supplementary shipping service to eastern points from Maine to Florida.

Air Conditioning Must Hold Exact Conditions In Test Laboratory

DEWEY, Okla.—A complete testing laboratory for the purpose of maintaining a constant high quality of their product is a feature of the Dewey Portland Cement Co. in their main plant here.

A Westinghouse air-conditioning system now being installed in this laboratory by Natkin & Co. it is believed, will be of material assistance in these continuous and exhaustive test programs by maintaining uniform environmental atmospheric conditions as pre-selected, and by keeping the laboratory technicians comfortable while engaged in their exacting work.

TEST UNDER EXACT CONDITIONS

"This company is one of the larger cement companies in this section of the country, a great amount of their cement being used in our new modern concrete highways and for the reinforcing of concrete structures," declared Bert Natkin, manager of Natkin's Tulsa branch.

"To insure maximum life to such construction, a sample of every 'batch' of cement that is made is moulded into a form and then given several tests of compression and resistance. To make these tests accurate and comparable, it is necessary that they be made in every case, under exactly the same temperature and humidity conditions, and for this we are air-conditioning the testing room in the laboratories of this company.

70° TEMPERATURE, 50% HUMIDITY

"For proper results this room must maintain a temperature of 70° and 50% relative humidity the year around. To accomplish this, we are installing one Westinghouse 2½-hp. compressor, in conjunction with a Westinghouse air-conditioning unit.

"This unit is complete with heating coils, cooling coils, humidifier sprays, and filters. The compressor and conditioning unit are being placed outside of the room to be conditioned and from it ducts for the supply and return of air are run into the room. Hygrostats and thermostats maintain the desired conditions.

"One of the greatest advantages that Westinghouse had to offer for such an installation was the hermetically sealed compressor with enclosed motor (cooled by the suction gas), as there is always a very dense suspension of cement particles in the air throughout the plant which might give a great deal of trouble to open motors."

10-hp. Conditioner Cools 12-Room House

ST. LOUIS—Grilled outlets with circular and square designed meshes conform with existing architectural design in the air-conditioning system installed in the home of William Milius at 5795 Lindell Blvd. here by Natkin & Co., Westinghouse distributor.

A 10-hp. unit is installed to cool the 12 rooms in the house. Equipment includes a CLS-390 Westinghouse compressor with an AH-103 air conditioner. Ducts leading from the condenser in the basement up the elevator shaft to the second floor distribute conditioned air to the home's upper rooms.

William Eisman, sales representative of Natkin Co., sold the job.

Kluit Directs Sales for Airtemp Distributor

DETROIT—Jack F. Kluit has been appointed sales manager of the air-conditioning department of Airtemp Construction Corp., distributor of Airtemp heating and air-conditioning equipment, according to H. B. Orr, general manager.

For 10 years Mr. Kluit was connected with Smith, Hinchman & Grylls, Detroit arcihtects and engineers, and later was associated with Albert Kahn, Inc., another local architectural and engineering firm. He came to Airtemp Construction Corp. from Detroit-Michigan Stove Co., where he was assistant sales manager of the air-conditioning division.

Don't Jump on Joe!

CLOGGED VALVES AREN'T ALWAYS HIS FAULT

Calling the serviceman on the carpet doesn't prevent clogged refrigerator valves. He isn't to blame; Nature is. In spite of the most careful handling of units, and in spite of careful baking at the factory, intricate passages of the mechanism may trap and hold trouble-making moisture.

A fundamental cure, like Activated Alumina, is needed. Activated Alumina *adsorbs* and removes the slightest trace of moisture. It is used in cartridges, which are temporarily inserted in the system, to remove moisture as the refrigerant circulates. The procedure is easy and inexpensive. In fact, Activated Alumina does such a good job that several refrigerator manufacturers now build permanent cartridges into their machines, forever preventing moisture-clogged valves.

ALUMINUM ORE COMPANY.
Sales Agent: ALUMINUM COMPANY OF AMERICA, Pittsburgh, Pennsylvania.

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PREVENTS CLOGGED REFRIGERATOR VALVES

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2100 INDIANA AVE., CHICAGO, ILL.

A CASTLE of Comfort in DETROIT

BARLUM HOTEL

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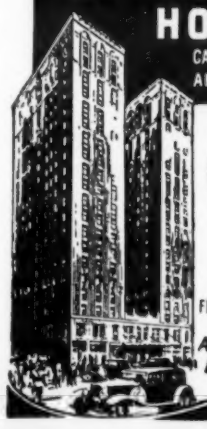

810 OUTSIDE ROOMS

$2.50 FROM DAILY

ALL WITH BATH

CONDENSERS
DOMESTIC EVAPORATORS
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AIR CONDITIONING SURFACE

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REFRIGERATION AND AIR CONDITIONING Products

BLAST HEATING SURFACE
COMFORT COOLERS
MARKET COOLERS
UNIT HEATERS

CATALOGUES ON REQUEST

McCORD RADIATOR & MFG. CO.
DETROIT, MICHIGAN

24 Air Conditioners Sold in August in Houston Territory

HOUSTON, Tex.—Twenty-four installations of air-conditioning equipment were made by distributors and dealers in this territory during August, according to reports made by these outlets to Houston Lighting & Power Co.

Room coolers made up three-fourths of the total, with 18 such installations reported during the month. The six other installations ranged from 4 to 40 tons refrigerating capacity. In addition, three other systems were sold but not installed, and five air washer systems were put in operation.

149 INSTALLATIONS MADE

A total of 149 air-conditioning installations had been made in the Houston territory during the first eight months of this year, statistics show. Of this number, 98 were complete systems, and the remaining 51 were unit coolers.

Two systems were installed in Walgreen drug stores during August, one of these being the month's largest job, 40 tons, and the other totaling 26 tons capacity. Both were Carrier installations. A Westinghouse system of 29 tons capacity was installed in Kelley's Cafe, and another Westinghouse system went into Lamar Hat Shop, this one totaling 4.2 tons.

Fluor Corp. began operation of a 5-ton Frigidaire system, and a General Electric system of the same capacity was installed in the home of Mrs. G. A. Rolls.

SALES BY DISTRIBUTORS

The 18 room coolers sold during the month were divided as following among the city's air-conditioning distributors:

Perfection-Aire (Cool-Aire), 8; Air Conditioning Co., (G-E), 3; Strauss-Frank Co. (Carrier), 3; Cochran (Westinghouse), 2; Star Electric Co. (York), 1; and General Electric Supply Corp. (G-E), 1.

AIR WASHER SALES

Air washer installations made during the month, and their rating in tons, were as follows:

Southern Film Service (1⅓ tons); Settegast-Kost Funeral Home (1⅓ tons); Fogle-West Co. (1⅓ tons); Southern Grill (4 tons); and South Texas Commercial National Bank (5⅓ tons).

Not included in the month's total were three air-conditioning systems, totaling 42 tons capacity, which were sold but not installed during the period. These will be included in the September tabulation.

Winter Air Conditioning Promoted by Utility

BUFFALO—Buffalo Niagara Electric Corp. is promoting interest in winter air conditioning by means of a bill stuffer piece which stresses the importance of the air breathed during winter being filtered, tempered, circulated, and humidified.

The average person, the folder points out, breathes 35 lbs. of air per day, compared to eating but 4 lbs. of food and drinking 3 lbs. of water.

Bill stuffer is enclosed with a return card, which the customer may use to request a booklet telling about health and comfort through proper winter humidification. The booklet is a reprint of Dr. Burke's article on "Your Home and Your Nose," published in American Home magazine in April, 1934.

Boston Edison Co. Booklet Lists Installations

BOSTON—"Air Conditioning for Increased Profits," an 86-page plastic-bound booklet listing and illustrating Boston stores, restaurants, hotels, office buildings, banks, funeral homes, theaters, hospitals, and factories which have been air conditioned, has been published by the air-conditioning division of Boston Edison Co.

Several illustrations are accompanied by testimonial letters from the managements of these companies or institutions, pointing out the value and benefits (particularly in a dollar-and-cents way) which these organizations have derived from their air-conditioning systems.

THE AIR AGE

BY F. O. JORDAN

Too Much of a Good Thing

Is it actually possible to get too much of a really good thing?

What a fool question. Everybody knows that more than enough of a good thing is too much—if you can get it.

Sleep is a very good thing in the proper quantities, but too much sleep is bad. For example, these cases, where some unfortunate person sleeps for years and years. They are instances of too much of a good thing.

Everybody likes good food but most people know from painful experience what too much of the best of it can do.

And the newspapers say that even too much love is bad, especially if practiced in the same neighborhood where your wife lives. Somebody or other is always finding out the possibility of getting too much of a good thing.

This goes even for air conditioning. Air conditioning is a good thing but we **can get too much of it.**

This is not to be construed as an argument against air conditioning any more than the doctor's warning against over-eating is a criticism of good food. It merely is a warning not to try to take too much of a very good thing by insisting on too low an environmental air conditioned temperature when your metabolic system is all tuned up to good old summer weather.

Of course, we all know how vitality and efficiency very definitely are reduced by the intense discomfort of the high temperatures and humidities of this same alleged good old summer time. However, we can err on the other side of the ledger by exposing our summertime anatomy to the rigors of air conditioned temperatures too far below the natural summer temperatures to which our body has been acclimated.

When we first get an air conditioner which has plenty of capacity it is a temptation to set the control away down and forget all about the fact that our bodies have become adjusted to higher temperatures.

* * *

A Warning from the Medical Profession

Dr. C. E. A. Winslow, Yale University health expert says:

"Like many new things this business of summer cooling has at first been overdone.

"There can be little doubt that many people have been injured by the sharp contrast between air-conditioned trains and the outside atmosphere.

With an outdoor temperature of 95° Fahrenheit the indoor temperature should not fall below 80°. At 90° outdoors the differential should be 12°. At 80° outdoors, the indoors temperature should be only 75°, meaning a differential of 5°."

* * *

However, just to show that this authority on public health is convinced that the proper degree of air conditioning definitely is beneficial to health, he says further:

"Of the vital importance of air conditioning, we have the amplest evidence.

* * *

"The studies of Prof. Ellsworth Huntington, Yale geographist, have demonstrated that outdoor climates which are too warm or too cold, too moist or too dry, have a very definite effect in increasing mortality rates.

"C. A. Mills has recently shown that an over stimulating climate is related to an excess death rate from certain metabolic diseases (e.g., pernicious anemia, goitre, angina pectoris, Addison's disease).

"L. Arnold, in experiments with animals, has demonstrated the mechanism by which a warm temperature increases liability to internal diseases, by diminishing the intestinal blood supply and lowering the acidity of the gastric juice.

"In considering the problems of air conditioning, we should no longer be satisfied with avoidance of certain harmful conditions in the air, such as dust, fumes, bad odors, too much chill or heat.

"Our aim should be efficiency and fullness and joy of living.

"We stand on the threshold of an era of air conditioning in which the pleasure of positive physical satisfaction, not merely the avoidance of dangers of health, will be our primary objective."

* * *

In order to avoid the injury claimed by Professor Winslow as a result of injudicious use of the air conditioning, we must avoid room temperatures in the lower seventies during hot weather.

But how can the very temperatures commonly maintained in the well heated room in winter, be injurious in the summer time? The answer is that we are not the same persons in the summer as in the winter. A tree is the same tree all year around.

During the winter the tree stands fully exposed, but immune to subzero temperatures and polar gales. Every spring it blossoms out as full of life and leaves as ever. But suppose that you could take the midsummer's tree whose entire system is attuned to midsummer conditions, and suddenly subject it to a midwinter gale of "10 below." The midsummer sap would freeze and it never would be the same old tree again.

Likewise, with our own limbs and trunk. They also undergo a transition in step with the changing seasons. Into our veins there is injected some mysterious essence of winter. Mother Nature's protective serum innoculates us to a considerable extent against the virulence of winter.

When our bodies are in this state, indoor temperatures may be positively injurious to our health, as well as decidedly uncomfortable to the normal, healthy individual.

When spring comes our ever-solicitous Mother Nature injects into our veins a different protective serum, the more languorous essence of spring.

While in this metabolic condition, and when the outdoor thermometer is well up in the nineties, indoor temperatures away down in the seventies cause an unhealthful shock. Even though the initial effect may be pleasant, the results are often undesirable.

Some members of the medical profession are predicting an increase of certain ailments as a result of the growing prevalence of air conditioning. Their prophesies may come true unless self restraint is practiced. Summer air conditioned temperatures must be held between the limits of loss in efficiency due to excessive warmth on the one side, and injury to health due to excessive coolness on the other.

Just because human efficiency and health suffer from a deadening heat wave, there is no excuse for air conditioned temperatures so low that joints stiffen and throats ache.

It is the writer's belief that the ideal indoor temperature for health and efficiency during very hot weather is one just hovering on the borderline of slight discomfort from the heat.

A THEME FOR ADVERTISING

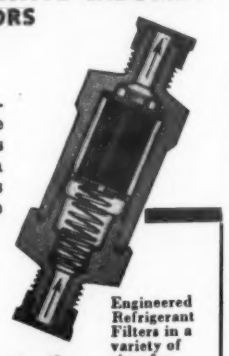
Most people are surprised to discover how comfortable 85° can be when the outside thermometer reads 100° in the shade, if you **keep the room humidity down.**

Some air-conditioning enthusiasts question the advisability of admitting that ill effects can result to health, even for misused air conditioning. However, trouble is trouble and it can beget more trouble if you do not look it right in the eye, and take the necessary steps for its elimination.

One of the steps would appear to be a timely warning for the necessity of self restraint. One of the larger distillers of "hard likker," acting along this line of thought, is advertising: "If you **must** drink whiskey, drink **good** whiskey, and remember that alcohol and gasoline **do not mix.**"

USE THE ZENITH REFRIGERANT FILTER

. . . FOR SULPHUR DIOXIDE FREON OR METHYL CHLORIDE REFRIGERATORS



Because

Zenith elements provide finer spacings (.002") than any asbestos sack or wire screen filter.

Easily Installed

Easily Cleaned

Permanent Protection

No Wool or Asbestos to Rot and Wear Out

Corrosion Proof—Leak Proof

Ample Capacity

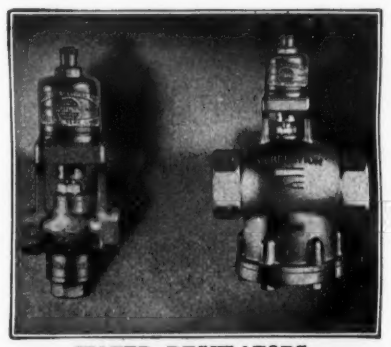
Engineered Refrigerant Filters in a variety of sizes for varying capacities.

Positive protection against dirt in Expansion Valves, Solenoid Valves, Capillary Tubes and other liquid control devices.

ZENITH CARBURETOR CO.
Subsidiary
BENDIX AVIATION CORP.
Detroit, Michigan.

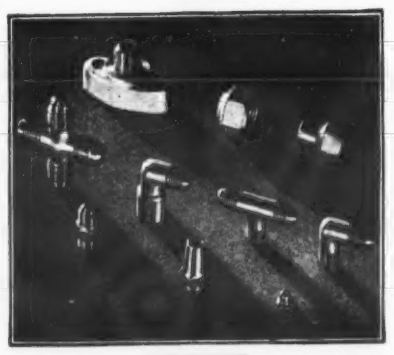
PERFECTION
- - - - *supreme excellence*

In the dictionary - - - or in the refrigeration service field - - - PERFECTION means the same - - - - supreme excellence . . .



COMPRESSOR PARTS

WATER REGULATORS



VALVES

FITTINGS

SERVICE TOOLS

A Complete Line of Refrigeration Parts
- Certified to Excel -

Every item in the complete line of Perfection Refrigeration Parts is certified to excel . . . And Perfection has achieved the ideal of excellence so well that electrical refrigeration service engineers throughout the world associate dependable parts, satisfied customers and growing business with the name PERFECTION.

This outstanding line includes Valves, Water Regulators, Fittings, Compressor Parts for all popular makes of units, Service Tools and Accessories.

Perfection Compressor Parts are accurately made, and carefully finished so that they are sure to fit perfectly and contribute to long, quiet, dependable operation of the refrigerating system . . . All other products in this complete line are also carefully made of the best suited materials, rigidly inspected and *certified to excel.*

Distribution is through leading jobbers—and jobbers and service engineers both agree that in the refrigeration field, as in the dictionary, Perfection means *supreme excellence.*

PERFECTION REFRIGERATION PARTS CO.
(A division of Perfection Gear Company . . . Established 1919) HARVEY, ILLINOIS

14,114 Commercial Machines Sold to Distributors and Dealers during August, 1937 by 15 Manufacturers

The following report of commercial refrigerating and air-conditioning equipment sales for August, 1937, was made to the Commercial Refrigeration Section of the Refrigeration Division of the National Electrical Manufacturers Association (Nema) by the following 15 companies:

Brunner Manufacturing Co., Carrier Engineering Corp., Crosley Radio Corp., Frigidaire Corp., General Electric Co., Gibson Electric Refrigerator Corp., Kelvinator Corp., Leonard Refrigerator Co., Merchant & Evans Co., Norge Corp., Servel, Inc., Uniflow Manufacturing Co., Universal Cooler Corp., Westinghouse Electric & Manufacturing Co., York Ice Machinery Corp.

	SALES FOR AUGUST, 1937							
	Domestic		Canadian		Other Foreign		Total World	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
1. Bottle Water Coolers—Complete	909	$ 62,037	12	$ 781	98	$ 7,068	1,109	$ 69,886
2. Pressure Water Coolers—Complete	2,067	216,056	37	3,349	195	19,820	2,299	239,225
3. Water Coolers—Low Side Only	434	34,479	2	156	21	2,017	457	36,652
4. Ice Cream Cabinets—Complete	868	143,614	61	7,333	118	16,264	1,047	167,211
5. Ice Cream Holding Cab. Only (Remote)	270	32,746	4	428	14	1,767	288	34,941
6. Bottled Beverage Coolers—Complete	1,230	120,777	57	2,941	77	7,234	1,364	130,952
7. Milk Cooling Cabinets (No High Sides)	62	4,607	.....	.....	1	82	63	4,689
8. Air Conditioners—Self-Contained	5*	6,136*	4	906	52	12,208	51	6,978
9. Air Conditioners—Floor Type (No High Sides)	249	119,019	3	393	11	3,787	263	123,199
10. Air Conditioners—Ceiling (Cooling Only—No High Sides)	162	28,178	1	290	14	1,829	177	30,297
11. Air Conditioners—Ceiling Type (Equipped for Heating—No High Sides)	49	22,408	1	387	2	1,060	52	23,855
12. Air Conditioners—Residential Type (No High Sides, Boilers, or Furnaces)	106	41,769	.....	.....	3	1,500	109	43,269
13. Condensing Units Less Than ⅛ Hp.	1,459	71,796	26	1,641	314	19,366	1,799	92,803
14. Condensing Units—⅛ Hp.	1,938	155,463	60	5,069	272	25,280	2,270	185,812
15. Condensing Units—½ Hp.	1,219	120,288	42	3,974	171	19,826	1,432	144,088
16. Condensing Units—¾ Hp.	910	119,832	25	3,856	113	16,215	1,048	139,903
17. Condensing Units—1 Hp.	619	99,417	12	2,288	63	11,065	694	112,770
18. Condensing Units—1½ Hp.	332	62,906	8	1,772	50	10,425	390	75,103
19. Condensing Units—2 Hp.	180	41,931	2	552	20	4,883	202	47,366
20. Condensing Units—3 Hp.	150	45,460	1	533	46	11,818	197	57,811
21. Condensing Units—5 Hp.	71	32,915	.....	.....	3	1,187	74	34,102
22. Condensing Units—7½ Hp.	37	23,514	2	1,129	3	1,892	42	26,535
23. Condensing Units—10 Hp.	57	41,000	.....	.....	2	1,470	59	42,470
24. Condensing Units—15 Hp.	35	33,378	1	494	.....	.....	36	33,872
25. Condensing Units—20 Hp.	16	19,951	.....	.....	2	2,724	18	22,675
26. Condensing Units—25 Hp.	16	24,972	.....	.....	.....	.....	16	24,972
27. Condensing Units—30 Hp.	16	27,609	.....	.....	.....	.....	16	27,609
28. Condensing Units—40 Hp.	36	62,917	.....	.....	2	3,200	38	66,117
29. Condensing Units—50 Hp.	3	5,025	.....	.....	.....	.....	3	5,025
30. Total—Lines 13 to 29 Inclusive	7,094	988,374	179	21,308	1,061	129,351	8,334	1,139,033
31. Total—Lines 1, 2, 4, 6, 8, and 30	12,163	.....	350	.....	1,601	.....	14,114	.....
32. Commercial Evaporators (Not Reported Above)	3,097	101,639	180	6,143	905	28,219	4,182	136,001
33. Air Conditioning Evaporators (Not Reported Above)	209	67,062	2	154	22	1,855	233	69,071
34. Total Commercial & Air Conditioning	.....	$1,976,629	.....	$44,569	.....	$234,061	.....	$2,255,259

*Includes sales and credits reported by more than one company.

Rolling Scaffold Used to Install Glass Blocks In Carrier Plant

SYRACUSE, N. Y. — A rolling scaffold was developed by construction engineers to speed the modernization of the new Syracuse plant of Carrier Corp.

Designed to facilitate the installation of the modern glass blocks in the air-conditioned office building, the unique scaffold allows eight sets of workmen to operate simultaneously on eight windows, at four different levels. The glass replaces the old type window.

The scaffold can be moved as a unit. After glass block is installed in one section, it takes less than 10 minutes to move the scaffold to another.

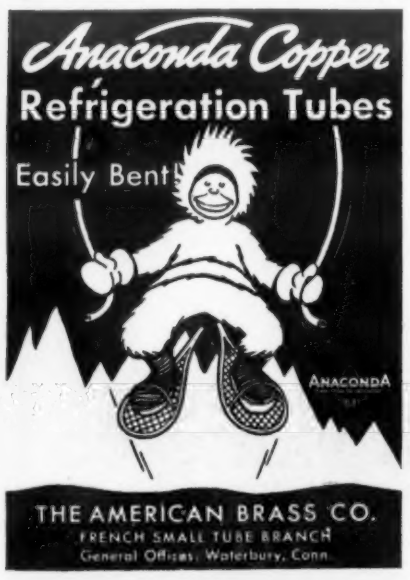
4,665 Leads Bring 1,191 Appliance Sales

NEWARK—A total of 4,665 leads, resulting in 1,191 appliance sales, were turned in by 1,528 non-selling employes of operating companies of the Public Service Corp. of New Jersey during July.

During the seven-month period ending July 31, 33,270 leads were turned in by non-selling employes, as against 31,368 in the corresponding period of 1936—an increase of 1,902 leads, or 6%.

Pederson Directs Sales for Brown-Camp Co.

DES MOINES—Clinton W. Pederson has been appointed sales manager of the home appliance division of Brown-Camp Hardware Co., local Fairbanks-Morse distributorship.



125,028 Household Electric Refrigerators Sold by 15 Manufacturers In August, 1937

The following 15 member companies of the Refrigeration Division of the National Electrical Manufacturers Association (Nema) reported household refrigerator sales for August, 1937: Apex Electrical Mfg. Co., Crosley Radio Corp., Fairbanks, Morse & Co., Frigidaire Corp., General Electric Co., Gibson Electric Refrigerator Co., Kelvinator Corp., Leonard Refrigerator Co., Norge Corp., Servel, Inc. (export only), Stewart-Warner Corp., Sunbeam Electric Mfg. Co., Uniflow Mfg. Co., Universal Cooler Corp., and Westinghouse Electric & Mfg. Co. Member companies not reporting included: Jomoco, Inc., Merchant & Evans Co., and Sparks-Withington Co.

The sales of the reporting companies do, however, include units manufactured for the following concerns: Major Appliance Corp., Montgomery Ward & Co., Potter Refrigerator Corp., and Sears, Roebuck & Co.

	SALES FOR AUGUST, 1937					
	Domestic		Canadian		Other Foreign	
Lacquer (Exterior) Cabinets Complete	Quantity	Value	Quantity	Value	Quantity	Value
1. Chest	269	$ 12,667	2*	$ 97*	99	$ 5,114
2. Less than 3 cu. ft.	1	48	.....	.....	.....	.....
3. 3 to 3.99 cu. ft.	4,053	250,442	17	1,029	1,424	93,131
4. 4 to 4.99 cu. ft.	26,393	1,758,690	799	53,523	4,489	315,811
5. 5 to 5.99 cu. ft.	22,348	1,808,232	581	47,072	1,729	146,876
6. 6 to 6.99 cu. ft.	36,662	3,167,795	223	20,544	898	86,133
7. 7 to 7.99 cu. ft.	5,884	601,283	61	5,957	369	39,899
8. 8 to 9.99 cu. ft.	3,666	386,548	.....	.....	139	16,793
9. 10 to 12.99 cu. ft.	7	909	.....	.....	.....	.....
10. 13 cu. ft. and up.	.....	.....	.....	.....	.....	.....
11. Total Lacquer	99,283	7,986,614	1,679	128,028	9,147	703,757
Porcelain (Exterior) Cabinets Complete						
12. Up to 4.99 cu. ft.	158	12,151	10	792	39	3,074
13. 5 to 5.99 cu. ft.	1,629	147,675	32	2,968	136	12,558
14. 6 to 6.99 cu. ft.	5,818	588,950	23	2,374	141	14,767
15. 7 to 7.99 cu. ft.	1,650	184,900	6	664	87	10,082
16. 8 to 9.99 cu. ft.	1,918	232,262	13	1,589	72	9,661
17. 10 to 12.99 cu. ft.	203	38,980	1	192	14	2,385
18. 13 cu. ft. and up.	449	90,405	12	2,418	65	13,633
19. Total Porcelain	11,825	1,295,323	97	10,997	554	66,160
20. Total—Lines 11 and 19	111,108	9,281,937	1,776	139,025	9,701	769,917
21. Separate Systems ¼ Hp. or Less	231	4,499	565	18,786	746	36,436
22. Separate Household Evaporators	773	9,219	173	2,411	955	7,518
23. Total—Lines 20, 21, 22	112,112	.....	2,514	.....	11,402	.....
24. Condensing Units ¼ Hp. or Less	463	33,077	22	1,486	146	9,725
25. Cabinets—No Systems	217	8,954	.....	.....	34	1,686
26. Total Household	.....	$9,337,686		$161,708	.....	$825,282

*Includes sales and credits reported by more than one company.

LET DOOR GASKETS BE YOUR BUSINESS GETTERS

Refrigerator owners will not call for you until they *have* to. But why *wait* for that call? Every refrigerator that is over five years old is in need of new door gaskets. That's your cue for *new* business and *more* business. Offer a complete gasket inspection and replacement service. Not only is this profitable business in itself—it gives you a chance to check over the entire mechanism as well.

Miller makes this service easy and profitable. From the Miller simplified line of 20 gasket types, you can service 80% of all boxes — and remember — Miller makes by far the majority of gaskets for refrigerator manufacturers, and the Miller Replacement Gaskets are made from the original specifications and dies—accurately made for specific boxes.

Ask your local jobber today about Miller Replacement Gaskets or write direct.

THE MILLER RUBBER COMPANY, INC., Akron, Ohio

Brooklyn Man Sells 1,002 Electroluxes In 6-Month Period

BROOKLYN—Specializing in the apartment-house field, Leonard F. Genz, wholesale appliance salesman for Brooklyn Union Gas Co., sold 1,002 Servel Electrolux refrigerators in the first six months of 1937. More than 600 of these units were sold for installation in new apartment buildings.

During the month of June alone, Mr. Genz sold more than 400 Electrolux refrigerators.

Back of Mr. Genz' performance this year lies considerable experience in Electrolux salesmanship. Before joining the staff of the Brooklyn utility in 1934, Mr. Genz was associated with Elizabethtown Consolidated Gas Co., Elizabeth, N. J. In 1933, while working for this company, he became a "charter member" of Servel's Quintuplet club by selling six Electrolux units on his Memorial Day holiday. His work on that day also resulted in two additional sales the next morning.

Before this year, Mr. Genz' record month was September, 1936, when his gas appliance sales totaled more than $46,000. Included in the month's total of 697 appliances were 345 Electrolux refrigerators.

Duluth Firm Builds Humidifier Line

DULUTH, Minn. — Recently announced here by the Electro Heater Mfg. Co. is a new line of house humidifiers said to contain no wicks or moving parts.

The line consists of three models, one being a portable type for locating within the room to be humidified, and the others being for basement installation, one model being for use with the warm air heating system, and the other being for use with steam heating.

The portable humidifier is said to be of 3-gallon capacity. It is provided with a low-speed fan for circulating air over a wire rack which supports the dehumidifying surface, consisting of a cloth, and delivering it to the room.

The basement units are to be supported overhead from the joists. These units are provided with float valves for regulating the water supply, which may be taken from convenient cold water piping, but preferably from the hot water system. This water is further heated to approximately 185° F. by a steam coil connected to the steam heating system, or by an electrical heating element if the house heating is of the hot air or hot water type.

Either hand-operated, or humidistatically-operated controls may be supplied for regulating the humidifying capacity of these units, which is placed by the manufacturer at 10 to 24 gallons of water per day.

READY NOW New Catalog

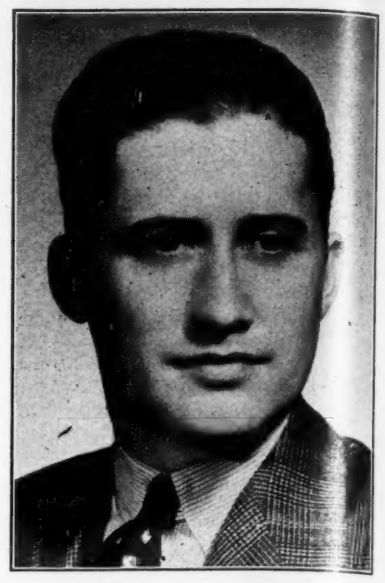
COMPLETE ENGINEERING DATA

This ENTIRELY NEW folder contains complete engineering data on BINKS Industrial Spray Nozzles—Atmospheric Spray Cooling Towers—Induced Draft Cooling Towers and Forced Draft Cooling Towers.

Write for this Valuable Catalog Today!

BINKS MANUFACTURING Co.
3114-40 Carroll Ave., Chicago

Directs Promotion



RICHARD T. CRAGG
New advertising and sales promotion director for R. Cooper Jr., Chicago General Electric distributor.

* * *

Cragg Heads Sales Promotion For R. Cooper Jr.

CHICAGO—Richard T. Cragg has been appointed advertising and sales promotion manager of R. Cooper Jr. Inc., General Electric distributor in Chicago and northern Illinois.

Mr. Cragg, just 26 years old and only three years out of Northwestern university, has been connected with the Cooper organization in a sales promotion capacity since his graduation. He succeeds Sam Nides, who left the company last month to form Nides-Cloud, Inc., distributing automatic stokers.

Institute Publishes Book on Castings for Porcelain

CHICAGO—A handbook on "Production of Castings for Porcelain Enameling," has just been published by the Porcelain Enamel Institute.

The booklet, prepared by the committee on cast iron practice of the Institute's technical research section, is the result of cooperation between expert foundrymen and representatives of the porcelain enameling industry.

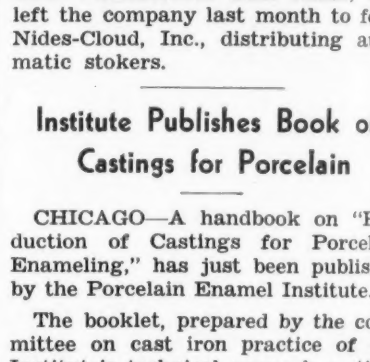
Included in the booklet are a number of illustrations depicting improper designs of castings. Among the subjects covered in individual sections are: blistering, warping, influence of design, influence of molding practice, influence of melting and pouring, influence of iron compositions, and influence of raw materials.

Provide Ample Protection from

FUMES

The serviceman should always take along the

CESCO HEALTHGUARD FUME KIT



LEAKS of refrigerants may be encountered at any time. No man should work in these fumes, even though the concentration be light and the time brief. It is *important* to be *ready* for them. The HEALTHGUARD FUME KIT is handy to take along—light, compact and surprisingly comfortable to wear. Cartridges for methyl chloride, sulphur dioxide and ammonia. Write for literature.

CHICAGO EYE SHIELD CO.
2352 Warren Blvd. CHICAGO, ILLINOIS

SERVICE METHODS

Servel's Service Manager Tells Why Oil in System Should Be Checked After Installation

BY K. M. NEWCUM

IMPORTANCE of maintaining the proper amount of oil in a compressor, and a suggested schedule of checking the oil level in condensing units, is outlined by P. B. Reed, service manager, Commercial Refrigeration Division, Servel, Inc., in a recent bulletin issued by that company.

Mr. Reed points out that everyone recognizes the fact that all moving mechanical parts, including those in the compressor must be supplied with the proper amount of lubrication. To assure proper distribution of oil to all parts of the compressor a certain oil level must be maintained in the crankcase.

RETURNED WITHOUT OIL

"Many compressors are returned to the Servel factory with little or no oil in them," Mr. Reed states. "The required oil charge was added to the compressors before they were originally shipped from the factory. The question is what happened to the oil."

Methyl chloride and Freon-12 both have the characteristic of diluting themselves with oil, he explained. Either of these refrigerants when in the chilling unit (evaporator) is not in its pure state, but is actually a mixture of oil and refrigerant.

The concentration or percentage of oil in the mixture varies with the temperature of the mixture, the velocity of the gas, and the type of chilling unit. The dilution is greater with Freon-12 than with methyl chloride, according to Mr. Reed. This is a normal condition and more should be known about it.

BEARINGS NOT LUBRICATED

If the oil level in a compressor becomes so low that the connecting rods do not contact it, the oil will not be splashed around to lubricate the bearings, pistons, cylinder walls, seal, etc. The only possible lubrication these parts can get is from the oil that may return with the refrigerant gas from the evaporator.

As a result, the parts are not receiving the proper amount of oil and they run stiff and begin to wear. Any looseness in any of the compressor parts will show up in the form of a knock. If this condition exists for only a short period, the addition of oil will allow the parts to run freely and the compressor will again run quietly.

If, however, the compressor has been running short of oil for an extended period, the parts will have become worn to a point where the addition of oil will not remove the knock. It may relieve the condition and prevent further damage, but it cannot put back the material that has been worn off while the surfaces were inadequately lubricated, according to Mr. Reed.

When a new commercial condensing unit is installed it has the correct amount of oil in the compressor. The chilling unit, tubing, valves, etc., are not charged with oil or refrigerant. With the system in operation, the refrigerant starts to circulate, carrying along with it a small percentage of oil. Once in the chilling unit the oil collects until the concentration of oil builds up to a point predetermined by the above-mentioned conditions of temperature and velocity and the type of low side.

RETURNS WITH REFRIGERANT

When a certain quantity of oil has accumulated in the evaporator, and has gone into solution with the refrigerant throughout the system, the oil in excess of this amount returns with the refrigerant vapor to the crankcase. There are even changes in the concentration percentage as these conditions change, and slight changes during different cycles of machine operation, states Mr. Reed.

The oil that remains in the chilling unit, and in solution with the refrigerant, comes from the compressor. Result is a lower oil level in the crankcase. Naturally, more oil must be added by the service man to compensate for the amount lost to the chilling unit.

CAN'T PREDETERMINE NEED

It is not possible, claims Mr. Reed, for the compressor manufacturer to predetermine the extra amount of oil that may be required. The extra oil charge is determined by the size of the chilling unit, its type and the kind of application. It is also impractical, Mr. Reed says, to recommend a certain definite amount of extra oil to be added for each pound of refrigerant used in the system.

Two systems, points out Mr. Reed, using the same amounts of refrigerant, may have different concentrations of oil in the chilling unit due to differences in tube sizes and length, refrigerant distribution, and other differences that affect the velocity and temperature.

The safest way to avoid running a compressor short of oil, declares Mr. Reed, is to follow these simple rules:

Check the oil level in the compressor; (1) within 24 hours after installation, (2) again one week after installation, (3) again one month after installation.

It is also recommended that the oil level be checked every three to six months as oil may be lost through leaks.

'Fix-It' Truck Services Farm Electrical Appliances In Utah District

SALT LAKE CITY—A "fix-it" truck, equipped for making minor repairs on practically any appliance, is now serving the 10,000 widely scattered residential and farm customers in the Provo division of Utah Power & Light Co.

The truck is manned by four men dressed in white uniforms identified by the "Reddy Kilowatt" emblem.

During the next few months the truck and its crew will stop at the home of every utility customer in the Provo district in search of defective appliances. Any appliances found with burned-out heating elements, frayed cords, loose connections, or similar defects will be repaired free of charge. Charges will be made only for necessary replacement parts.

While on its junket, the repair crew also will keep on the lookout for possible prospects for new appliances.

The specially constructed "fix-it" truck is equipped with workbenches, test panel, tools, and repair parts. Room is also provided for display of new appliances.

If the "fix-it" idea proves successful, Sales Manager Huckins of the utility plans to apply it to other districts throughout the company's territory.

New Service School Opens in Detroit

DETROIT — Thermal Institute, a new trade school devoted to the study of practical refrigeration and air conditioning, has been opened at 51 Temple Ave. here by Maurice F. Tyroler.

At present, Thermal Institute offers three courses—Practical Refrigeration, Advanced Refrigeration, and Air Conditioning. The nature of these courses is fairly well indicated by their titles.

Mr. Tyroler firmly believes that practical knowledge should come before involved theory, so he has designed his courses accordingly. His first course is arranged on the project plan. Students are given a minimum of theory, but are taught to make flares and fittings, to know the various parts of a refrigerating unit and the functions they perform, to tear down a complete unit and reassemble it.

ADVANCED COURSE

The advanced course concerns itself with the various principles of refrigeration underlying the operation of different types of units. This course too, however, has its share of practical shop work.

The air-conditioning course will be purely a lecture course until such time as an air-conditioning laboratory can be set up.

Mr. Tyroler, who will handle a large share of the instruction, has had 28 years of teaching experience and six years of experience in the refrigeration field. He has been connected with Herkimer Institute, New York City, Refrigeration Engineering Institute, Detroit, and Detroit School of Refrigeration.

BLOSSOM ASSISTS

John Blossom, who will assist Mr. Tyroler with the instruction, was formerly with American Injector Co. and more recently with Kelvinator's service department. He also has been connected with the Detroit School of Refrigeration.

Another instructor, whose name is as yet unannounced, will complete the staff.

Cost of the complete course (including both refrigeration and air-conditioning) is set at $225. If purchased separately, $150 each will be charged for the combined refrigeration course and the air-conditioning course. As an introductory offer, however, the entire group of three courses is being offered for a limited time at $150.

To furnish his students with the practical part of their refrigeration education, Mr. Tyroler plans to buy old boxes and units for the students to recondition. After being completely overhauled and rejuvenated these refrigerators will be sold on the second-hand market.

Stickers Advertise Service Facilities

OKLAHOMA CITY — Albert Ahrens Co., General Electric and Hotpoint appliance dealer, is calling attention to its service department by inserting promotional stickers in all bills and receipts mailed out.

These stickers, gummed on one side, are white, with the following legend printed in blue: "For service on refrigerators, washers, or cleaners call Albert Ahrens Co."

The transparent, oiled envelopes used to hold the stickers bear the printed suggestion that the sticker be placed in the refrigerator room, and the information that the Ahrens service crew has been company-trained for 10 years in efficiency and courtesy.

Commonwealth Edison Co. Offers Appliance Course

CHICAGO—Instructions in air conditioning and the technical and operating features of electrical appliances are included in the 16 free courses being offered by the industrial department of Commonwealth Edison Co. for employes during the fall and winter term.

The course on technical and operating features of electrical appliances is especially designed for employes in the sales and home service fields. It includes a study of applied electrical fundamentals, operating characteristics, and costs of electric ranges and other appliances.

GASKETS, WASHERS, SPACERS
LEAD ALLOY SHEET MATERIAL

Any required thickness, hard or soft. Hundreds of dies available. Write for samples and prices.
LEAD ALLOY PRODUCTS CO.
6623 Walton St. Detroit.

VIRGINIA SMELTING Company
WEST NORFOLK, VIRGINIA
131 STATE ST. BOSTON-76 BEAVER ST. N.Y.
EXTRA DRY
ESOTOO
LIQUID SULPHUR DIOXIDE
V-METH-L
VIRGINIA METHYL CHLORIDE

SERVICE MEN!

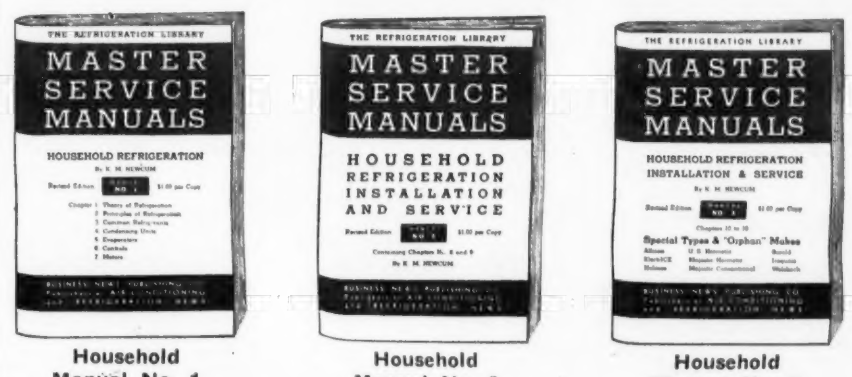
The Master Service Manuals on HOUSEHOLD Refrigeration Installation and Service provide a complete and inexpensive course of study for the beginner and valuable reference books for the experienced man.

The Master Service Manuals on COMMERCIAL Refrigeration offer an advanced course of study dealing with the more complicated problems encountered in a wide variety of commercial applications.

MASTER SERVICE MANUALS

by K. M. NEWCUM

Household Refrigeration



Household Manual No. 1 | Household Manual No. 2 | Household Manual No. 3

Note: All three of these manuals on household refrigeration are ready for delivery.

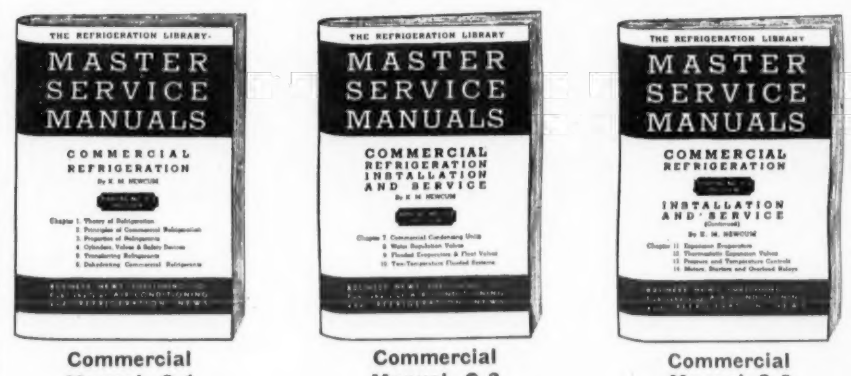
MANUAL NO. 1—The theory and principles of refrigeration explained in simple terms. Characteristics of the various refrigerants in common use. An explanation of the construction and operation of the major component parts of a household electric refrigerator including the condensing unit, evaporator, control, and motor. 144 pages. Price $1.00.

MANUAL NO. 2—Diagrams show how to distinguish the difference between the fundamental types of systems. Detailed instructions regarding the proper methods of installing and servicing each type. This book is a comprehensive guide to the servicing of all the popular makes of household electric refrigerators. 128 pages. Price $1.00.

MANUAL NO. 3—Detailed information regarding methods of servicing several special types of refrigerators (now classified as "orphan makes" because production of these models has been discontinued) including Allison, ElectrICE, Holmes, U. S. Hermetic, Majestic Hermetic, Majestic Conventional, Socold, Iroquois, and Welsbach. 144 pages. Price $1.00.

Foreign Postage—Add 50 cents to the total amount of your order if shipment is to be made to any point outside of the United States.

Commercial Refrigeration



Commercial Manual C-1 | Commercial Manual C-2 | Commercial Manual C-3

Note: Manuals C-1 and C-2 are ready for immediate delivery. C-3 is not yet completed.

MANUAL NO. C-1—The theory and principles of refrigeration presented in a more complete manner than in previous manuals. Properties of refrigerants, including effect on lubricating oils, inflammability and explosive characteristics. Types of refrigerant cylinders, valves and safety devices. How to transfer refrigerants from larger to smaller cylinders. Drying of refrigerants used in commercial systems. 96 pages. Price $1.00.

MANUAL NO. C-2—Installation and service methods. Detailed information on commercial condensing units and their component parts, such as crankshafts, connecting rods, piston valve and discharge valve assemblies, stuffing box seals, liquid receivers, etc. Water regulating valves, both electric and pressure-actuated types, their operation, adjustment and servicing. 112 pages. Price $1.00.

MANUAL NO. C-3—Installation and service methods continued. Chapters on operation of evaporators, thermostatic expansion valves, pressure and temperature controls, motors, starters and overload relays. Note: This book not yet completed but will be available in November, 1937. Price $1.00.

The Master Service Manuals are carried in stock by all the leading jobbers of refrigeration supplies. If your jobber cannot furnish, send your order and remittance by mail to the publisher.

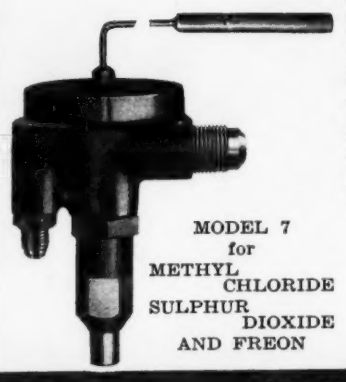
Note: On account of the increased costs of production it is no longer possible to offer reduced rates for orders in combination with subscriptions to the News. The only discount now available applies to an order for books only which amounts to $25.00 or more. This *quantity* discount is 10%

Foreign Postage—Add 50 cents to the total amount of your order if shipment is to be made to any point outside of the United States.

BUSINESS NEWS PUBLISHING CO.
5229 Cass Ave., Detroit, Mich.

THE BUYER'S GUIDE

The Fewer The Parts— The Better The Valve



MODEL 7 for METHYL CHLORIDE SULPHUR DIOXIDE AND FREON

Simplicity is a virtue in all things—but nowhere more important than in a thermal expansion valve. With this in mind we've been downright stingy about the number of parts that go into Peerless Thermal Expansion Valve Model 7—and we know that has a lot to do with the "top notch" performance of this valve.

We know that, if these few parts are accurately machined, carefully assembled, and thoroughly tested,—we'll build a good valve—one you'll like to use because it's dependable. And that's the reason we build 'em that way!

- Forged Brass Body
- Ball Type Orifice
- Three Pusher Pins
- Simplified Construction
- Easily Adjusted

PEERLESS of AMERICA, Inc.

ESTABLISHED IN 1912 AS THE PEERLESS ICE MACHINE CO.

New York Factory, 43-20 34th Street, Long Island City
Main Factory—General Offices, 515 West 35th Street, Chicago
Pacific Coast Factory, 3000 S. Main Street, Los Angeles

PEERLESS JOBBERS IN ALL PRINCIPAL CITIES

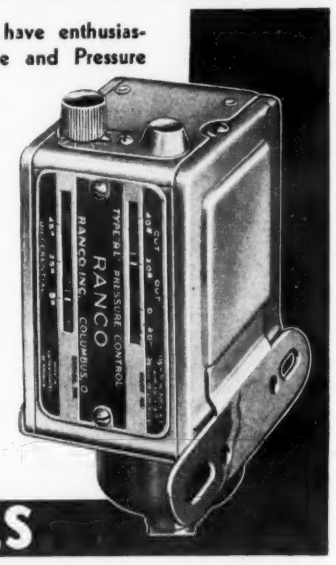
BUY PEERLESS FOR PERFORMANCE

GOING PLACES!

SERVICEMEN and engineers the country over have enthusiastically adopted Ranco Type RL Temperature and Pressure Commercial Controls.

These controls are offered with either constant cut-in or constant cut-out which allows the setting of either a minimum or a maximum temperature or pressure yet having differential adjustment. One control for all commercial gases.

Built for heavy-duty service in a wide range of commercial applications, such as water and beverage coolers, meat coolers, walk-in coolers, show cases and milk coolers. The line also includes a thoroughly dependable control for automatically-fired steam boilers. Write for bulletin.



Ranco TYPE RL COMMERCIAL CONTROLS

RANCO, Inc., Columbus, O.

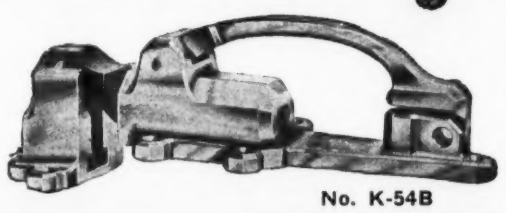
KASON *FORGED-BRASS* HARDWARE FOR *SUPER*-SERVICE

MODERN REFRIGERATION demands hardware of *super-service* quality—hardware which will serve faultlessly and faithfully in this severe type of service and surmount the climatic and atmospheric conditions peculiar to it. KASON has provided this type of *super-serviceability* in its Forged-Brass Hardware, which by reason of its greater tensile strength and wider elastic limit is *unqualifiedly the hardiest metal construction known to the industry.*

A complete line of KASON Forged-Brass Hardware for the refrigerator manufacturer is presented in detail in Catalog No. 38 now ready for distribution.

KASON HARDWARE CORPORATION
127-137 Wallabout St., Brooklyn, N. Y.

No. 1058



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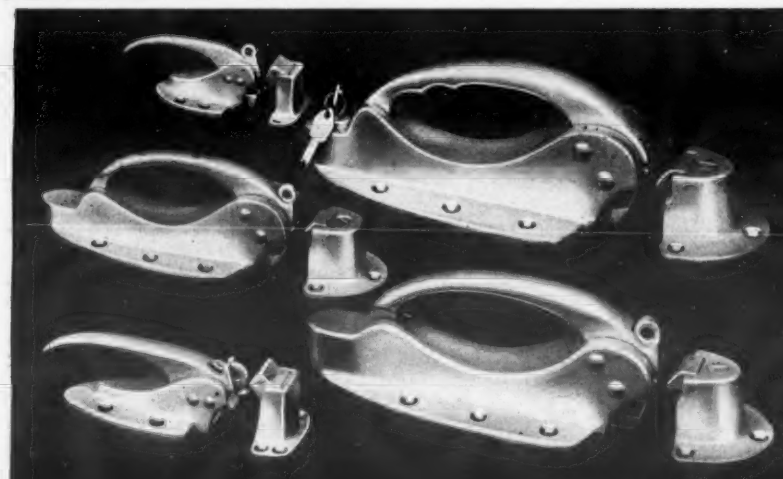


COMPLETE AND MODERN LINES OF COMMERCIAL HARDWARE FOR EVERY APPLICATION

GRAND RAPIDS BRASS COMPANY
GRAND RAPIDS, MICHIGAN

PAR REFRIGERATION COMPRESSORS

PAR Refrigeration Compressors are made in six sizes. Models R25—R50—R100 are two cylinder pumps and are recommended for use on highsides from ¼ to 1 horse power. Models R200—R500—R1000 are four cylinder V type construction and are recommended for use on highsides from 1½ to 10 horsepower.

Par Refrigeration Compressors are designed for use with Freon and will successfully operate with Methyl Chloride. They are designed with large displacements for low speed operation. Multiple cylinder V type construction develops a very smooth and quiet operation.

Pistons are nickel-iron and are fitted with three piston rings. Crank shafts are drop forged steel. Shaft bearings are Oilite. Connecting rods are made of bearing bronze. Wrist pins are steel hardened and ground. Cylinders and cylinder heads are effectively finned for efficient cooling. Shaft seal is hand lapped. External spring used on shaft seal to eliminate chatter and noise.

Equipment includes—grooved fan spoke flywheel, suction and discharge line valves. Bulls-eye sight oil gauge in crank case.

MODERN EQUIPMENT CORPORATION
DEFIANCE · OHIO · U·S·A

QUESTIONS

Air Conditioning Installations Data

No. 3113 (Engineer, Illinois)—"If at all possible, can I obtain from your organization data and figures which I can use to bring up to date a tabulation in connection with my study of air conditioning.

(The tabulation covers distribution of conditioning plants in tons of refrigeration by class of service through 1932 only.)

"If you have no such data available would you kindly inform me as to where I might try to get same."

Answer: We have just published a booklet, "AIR CONDITIONING SURVEYS," which contains summaries of installations for comfort cooling made in 55 United States trading centers. These reports were furnished by the power companies serving the various areas and are classified by type of installation and by date of installation (prior to 1935, during 1935, and during 1936). Copies of this book are available for 50 cents per copy.

Truck Fleet Owners

No. 3114 (Advertising Agency, Minnesota)—"Can you furnish us, or tell us where to get a list of companies owning fleets of refrigerated trucks?

"This inquiry is in behalf of one of our customers who makes a small fan with a 6, 12 or 32-volt motor, which is adaptable to a great many uses. They understand that some of these trucks use ice and figured that the fan could be utilized to circulate a current of air over the surface of the ice."

Answer: The two major users of refrigerated trucks—and these two classifications of users probably account for more than 90% of the refrigerated trucks now in use—are meat packing concerns and ice cream manufacturers.

For lists of these companies address the Institute of American Meat Packers, 59 E. Van Buren St., Chicago, Ill. and the International Association of Ice Cream Manufacturers, 1105 Barr Bldg., Washington, D. C.

Makers of Evaporators

No. 3115 (Dealer, Illinois)—"We are subscribers of your AIR CONDITIONING AND REFRIGERATION NEWS and ask you if you will please give us the manufacturer's name and address of Mullins' evaporators as used on 1931 and 1932 model Westinghouse refrigerators.

"We would appreciate your cooperation so that we can communicate with the manufacturer of the said Mullins' evaporators."

Answer: The Mullins' evaporator is made by the Mullins Mfg. Co. of Salem, Ohio.

You may also be able to secure suitable replacement evaporators from Fedders Mfg. Co., 57 Tonawanda, St., Buffalo, N. Y.; Peerless of America, Inc., 515 W. 35th St., Chicago, Ill.; Standard Refrigeration Co., 9 So. Clinton St., Chicago, Ill.; or Trenton Auto Radiator Works, 626 Brunswick Ave., Trenton, N. J.

National Refrigeration Show

No. 3116 (Manufacturer, Delaware)—"We are writing to know if you would give us some information in reference to the National Refrigeration Show, which we understand is to be held the first week in November in Chicago.

"We should be pleased to receive the names of the headquarters of the committee so that we might learn if there is any space available and the cost of the space."

Answer: See below.

No. 3117 (Manufacturer, California)—"Please advise us as to whom to get in touch with regarding space at the Refrigeration Service Engineers Exhibit, to be held in Chicago, Nov. 3, 4, and 5."

Answer: We believe you have reference to the exhibits that will be held in conjunction with the national convention of the Refrigeration Service Engineers Society, Nov. 3, 4 and 5. The refrigeration supply jobbers association and the refrigeration parts manufacturers association will also meet in Chicago the same week.

For information on exhibit space address H. T. McDermott, secretary, Refrigeration Service Engineers Society, 433 N. Waller Ave., Chicago Ill.

Perfection-Aire Units

No. 3118 (Dealer, New Jersey)—"Kindly advise us who manufactures Perfection-Aire units."

Answer: The Perfection-Aire conditioner is manufactured by the Carraway-Byrd Corp., Dallas, Texas.

For a complete list of manufacturers of portable room coolers see the classification headed "self-contained room coolers," in the Comfort Cooling Guide, which was published as a supplement to the June 23, 1937 issue of AIR CONDITIONING AND REFRIGERATION NEWS. Copies of this issue with the Guide are available at a cost of 20 cents.

The Comfort Cooling Guide is a sample section of the 1938 REFRIGERATION AND AIR CONDITIONING DIRECTORY, now in preparation, which will contain listings of all manufacturers of every type and variety of household, commercial and industrial refrigeration, and air-conditioning equipment, parts, materials, supplies, tools and accessories. It will give complete addresses and trade names.

Sales Statistics

No. 3119 (Manufacturer, Ohio)—"On page 8 of the Aug. 11 issue of REFRIGERATION NEWS, we find a tabulation showing estimated monthly sales of electric refrigerators. The yearly totals for 1934, 1935 and 1936, as shown in this statement, differ to a small extent from those shown in your articles regarding industry sales in Jan. 6 and Feb. 3 issues.

"Will you please advise which set of figures we should use in making up our studies of sales?

"The monthly figures for 1932 and 1933 also differ from those shown in the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY."

Answer: There have been some adjustments in some of the early totals but you can take the figures as used in Aug. 11 issue as substantially correct.

The monthly figures for 1932 and 1933 check with those published on page 60 of the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK.

Dehydrating Tubes

No. 3120 (Manufacturer, Oregon)—"Will you please be kind enough to let us know the different sources of supply on the small pencil type dehydrating tubes used by case manufacturers for removing the fogging between the glasses on double and triple glass cases?"

Answer: The following are manufacturers of dehydrators:

American Hard Rubber Co.
11 Mercer St., New York, N. Y.

Arcade Mfg. Co.
1212 E. Shawnee St., Freeport, Ill.

Garden City Plating & Mfg. Co.
1430 S. Talman Ave., Chicago, Ill.

Henry Valve Co.
1001 N. Spaulding Ave., Chicago, Ill.

Imperial Brass Mfg. Co.
564 S. Racine Ave., Chicago, Ill.

Ingram-Richardson Mfg. Co.
32nd St., Beaver Falls, Pa.

Kason Hardware Corp.
127 Wallabout St., Brooklyn, N. Y.

Kerotest Mfg. Co.
2525 Liberty Ave., Pittsburgh, Pa.

Silica Gel Corp.
Baltimore Trust Bldg., Baltimore, Md.

Manufacturers' Address

No. 3121 (Engineer, Rhode Island)—"Can you supply me with the addresses of the following refrigeration companies? Thank you very much.

Cooke Electric Refrigeration Co.
Refrigeration Products, Inc.

Answer: Address of Refrigeration Products, Inc., is 122 W. Illinois St., Chicago, Ill. The Cooke Electric Refrigeration Co. was reported inactive in 1931 and we have no further data about the company. However, there is a Cook Electric Co. located at 2700 S. Port Ave., Chicago, Ill., manufacturer of commercial refrigeration and air-conditioning controls.

Cooke Seal Rings

No. 3122 (Manufacturer, Texas)—"We would appreciate information as to the manufacturer of the Cooke seal ring for compressors and rotary shafts. We understand that this manufacturer is located in Chicago but do not know either the name of the concern or the street address."

Answer: According to our records, the manufacture of Cooke seal rings in now in the hands of the Rotary Seal Co., 809 W. Madison Ave., Chicago, Ill.

Leak Alarm Device

No. 3123 (Air-Conditioning Dealer)—"In your Aug. 25 issue of AIR CONDITIONING AND REFRIGERATION NEWS there is a description of a leak alarm signal device, by K. M. Newcum.

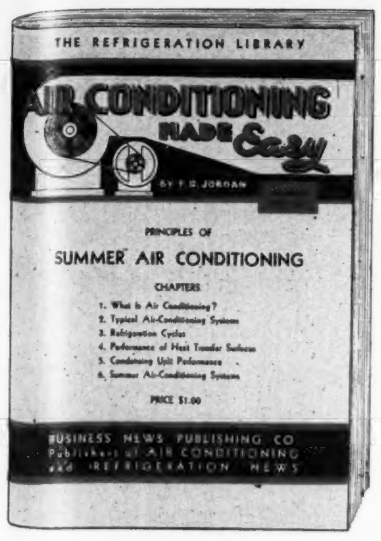
"Will you please advise us where we can obtain complete information on this device, that is, the manufacturer, from whom we can obtain dimensional data, price, etc."

Answer: The leak alarm device described in the Aug. 25 issue is made and distributed by the Midwest Engineering Co., 617 Fulton Ave., Chicago, Ill. Address your inquiry to Thos. McKee.

Air Conditioning Made Easy

A Complete Course of Study Covering All Phases of Air Conditioning

By F. O. Jordan



Manual A-1
Summer Air Conditioning

MANUAL NO. A-1—Principles of Summer Air Conditioning. Functions of Air Conditioning. An explanation of typical air-conditioning systems, refrigeration cycles, performance of heat transfer surfaces, condensers, unit performance and summer air-conditioning systems. 112 pages. Price $1.00. (This book is now ready for immediate delivery.)

Manual A-2
Winter Air Conditioning

MANUAL NO. A-2—Principles of Winter Air Conditioning. Chapters on typical heating systems, typical heating connections, steam and hot water heating systems, hot air heating systems, heat generators and controls, heating specialties, specifications of heating systems, trouble shooting. Price $1.00. (This book will be off the press in October.)

Manual A-3
Design Engineering

MANUAL NO. A-3—Principles of Design Engineering. Chapters on conditions for human comfort, methods of comfort control, mechanics of comfort control, principles of design, air-conditioning unit design. Price $1.00. (Off the press in October.) Other manuals in this series, including a reference book, will be announced later.

This series of manuals provides a complete course of study covering all phases of air conditioning or contractors, architects, engineers, service men, and students. Profusely illustrated with pictures and diagrams of systems and containing many charts and tables. Written by F. O. Jordan, B.S.M.E., graduate of Purdue University, registered consulting engineer (Michigan) and Air Conditioning Editor of the News. Mr. Jordan has had long practical experience in the engineering departments of leading manufacturers of air-conditioning equipment. In this series of manuals he has collected and arranged the essential information from all the sciences (mathematics, physics, chemistry, thermodynamics, etc.) required by the engineer and contractor.

• • •

Different Load Factors Involved in Estimating Commercial Job than Apply to Domestic Installation

SECTION NO. 20-B

Commercial Load And Estimate

General

In Section 20, part 1, loads and load estimates were discussed in general. However, some types of loads are unimportant or non-existent in certain branches of the industry. Therefore, it is possible and desirable to formulate simplified methods of load computation for a given branch or division of air conditioning by omitting or estimating only roughly certain unimportant loads, and by accentuating loads which are important to the particular job.

Further simplification of field engineering methods is very desirable for the purpose of reducing overhead costs, and of allowing the limited supply of experienced field engineers to do a greater volume of the field engineering work made necessary by the rapid development of the industry.

However, the same methods of simplification do not apply to all types of projects for steps toward simplification which can be used without sacrifice of the required accuracy for light occupancy projects may result in serious error upon the project of heavy occupancy, because load sources which are unimportant in one branch, may be the chief source of heat gain in the other branch.

For example, sun load generally is far more important in residential work than occupancy and appliance loads, while on certain projects of heavy occupancy the two latter named loads may constitute practically the entire load.

From the angle of load sources, air-conditioning field engineering falls naturally into two general divisions as to type: (1) the light occupancy project whose concentration of occupants does not exceed one person per 25 square feet of floor area, (2) the heavy occupancy project where more than one person is present for each 25 square feet of floor space.

In Section 20, part 1, there was given a broad discussion of all load sources of heat gain encountered in comfort air conditioning for the purpose of helping toward an understanding of the complete problem.

Now we are ready to discuss simplified methods of load estimation which have been devised for the purpose of saving time and energy for the field engineer when engaged in the heavy occupancy classification.

Air conditioning for heavy occupancy is commonly known as "commercial" air conditioning. It is well to make use also of the limiting term, "for comfort," for the purpose of differentiating between air conditioning for comfort and for manufacturing processes.

In that division of the industry which pertains to residential and similar projects of light occupancy concentration, the loads which are due to the occupants may be estimated by a minimum of simple factors without appreciably affecting the accuracy of the domestic load estimate. However, proper care must be taken in estimating the heat leakage through building construction, as such leakage constitutes the major portion of the load.

In the commercial air-conditioning installation this condition is reversed, because the occupancy concentration in this field generally is high, so that the heat gains which depend upon and arise from the occupants usually form the major portion of the cooling load.

For this reason, great care must be exercised in estimating commercial loads which are governed by the number of occupants, while heat leakage through building construction usually is of lesser importance. Furthermore, the types of construction generally used with the commercial building vary considerably from the types encountered in residential work, so that factors for building heat leakage are influenced accordingly.

Another factor which must be considered for the commercial project of heavy fluctuating occupancy is the lag in time required for sunloads to pass through building construction.

"Lag" may make as much as 25% difference in the load for it may throw the heavy east wall sunload of 10 a.m. into the conditioned space at high noon on top of a peak occupancy load, or it may throw the heavy roof sunload of high noon into the conditioned space in the middle of the afternoon when occupancy is light, so that it does no harm.

Failure to consider "lag" may lose jobs, or result in unsatisfactory ones. Table 35, together with its directions, includes the effect of "lag" in a way that is easy to use.

Extreme simplicity in field engineering methods is of less importance in the commercial than in the residential application, because the latter field is based primarily upon a larger number of jobs at a small margin of profit per job. The large number of jobs demands field engineering methods of sufficient simplicity that they may be used easily by large numbers of salesmen, while the small margin of profit per unit demands a minimum of overhead.

However, the commercial project

(*Continued on Page 24, Column 2*)

Table 35—Heat Leakage Factors

(This table is especially prepared for use in connection with commercial projects whose occupancy exceeds one person per 25 sq. ft. of floor area.)

Explanation and Directions:

1. To compute the hourly load upon a surface, multiply the area of the surface in sq. ft. by the proper factor given by this table. Cooling Loads will be in *B.t.u. per hour.* Heating Loads will be *Equivalent Direction Radiation* in sq. ft.

2. Heat Leakage factors are based upon a temperature difference during the cooling season of 15°, and a temperature difference during the heating season of 80° between the outside dry-bulb temperature and the dry-bulb temperature within the conditioned space. For other temperature differentials the factors should be changed proportionately.

3. Heat Leakage factors are based upon average good construction. Due allowance must be made in cases where such conditions do not exist.

4. Never apply both the factor in column D and the factor in column E to the same surface, because the factor in column E includes both Transmission and Sun Effect.

5. For unprotected windows or skylights use double the factor in column E for the glass "with shades."

6. For *top floor* spaces, if occupancy varies less than 60% during daylight hours, use factors from column E for roof and for windows of exposure having greatest window area (except for north exposure). Use factors from column D for other surfaces.

7. For spaces *not* on top floor, if occupancy varies less than 60% during daylight hours, use factors from column E for heaviest wall and window exposure (except north). Use factors from column D for other surfaces.

8. If occupancy is 60% heavier between noon and 1:00 p.m. than during the remainder of the day, use factor from column E for east wall and south windows. Use factors from column D for other surfaces.

9. If occupancy is 60% heavier between 5:00 and 7:00 p.m. than during the remainder of the day, use factor from column E for west windows and for roof (or west windows and west wall if space is not on top floor). Use factors from column D for other surfaces.

10. If occupancy is 60% greater both between noon and 1:00 p.m., and between 5:00 and 7:00 p.m., base the equipment selection upon paragraph No. 8 or No. 9 above, depending upon which condition shows the heavier load.

11. If peak occupancy occurs less than two hours after sundown and is 60% heavier than during daylight hours, use factor from column E for west wall (not for west windows). Use factor from column D for other surfaces.

Items Nos. 6, 7, 8, 9, 10, and 11 take into account the "lag" in time of heat passage through the usual type of construction, as well as the transmission coefficients, for the construction.

A.	B.		C.	D.	E.	F.
				Cooling Factors		
				Transmission Only	Sun Plus Transmission	Heating Factors
No.	Construction		Insulation	B.t.u./Hr.	B.t.u./Hr.	E.D.R.
1.	Outside Walls—9″ Masonry		None*	5.5	12.0	.12
2.	Outside Walls—Frame-Veneer—13″ Masonry		None*	4.5	8.0	.10
3.	Outside Walls—17″ Masonry		None*	3.5	5.0	.08
4.	Outside Walls—Any Standard Construction		3½″	1.5	3.0	.03
5.	Masonry—Against Earth		None	0.0	0.0	.05
6.	Windows—(with shades)		—	16.5	50.0	.35
7.	Windows—(with awnings)		—	16.5	35.0	.35
8.	Skylights (with shades)		—	16.5	80.0	.35
9.	Interior Partitions (13″ solid masonry)		None	0.0†	—	.07
10.	Interior Partitions (glass or metal)		—	10.0	—	.20
11.	Other Interior Partitions		—	4.0	—	.07
12.	Other Interior Partitions		3½″	1.0	—	.02
13.	Roof—6″ Concrete—With Attic		None	5.0	8.0	.11
14.	Roof—3″ Concrete—With Attic		None	7.0	12.0	.16
15.	Roof—1″ Wood—With Attic		None	5.0	15.0	.11
16.	Roof—6″ Concrete—No Attic		None	7.0	12.0	.16
17.	Roof—3″ Concrete—No Attic		None	12.0	18.0	.27
18.	Roof—1″ Wood—No Attic		None	8.0	22.0	.18
19.	Roof‡ With Attic		1″	2.5	5.0	.06
20.	Roof‡ With Attic		2″	1.8	3.5	.04
21.	Roof‡ With Attic		3½″	1.0	2.7	.02
22.	Roof‡ No Attic		1″	3.5	9.5	.08
23.	Roof‡ No Attic		2″	2.0	5.5	.05
24.	Roof‡ No Attic		3½″	1.1	3.0	.02
25.	Ceiling Under Finished Room		None	3.0	—	.00
26.	Floor Over Finished Room		None	3.0	—	.00
27.	Floor Over Basement		None	0.0†	—	.04
28.	Floor Over Or On Ground		None	0.0	—	.05

*With plaster directly on wall. For 2″ furring (air space), multiply values by 0.7. For 2″ good insulation, multiply values by 0.5.

†Except where special source of heat exists beyond wall, or where occupancy concentration is less than one person per 25 sq. ft. of floor area, when a factor of 3.0 should be used.

‡For any standard construction except steel.

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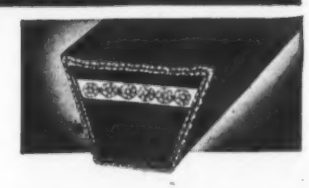

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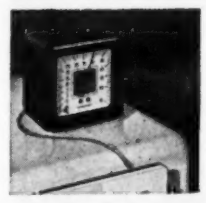

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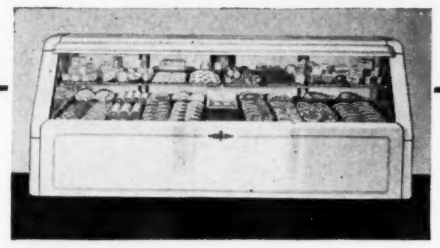

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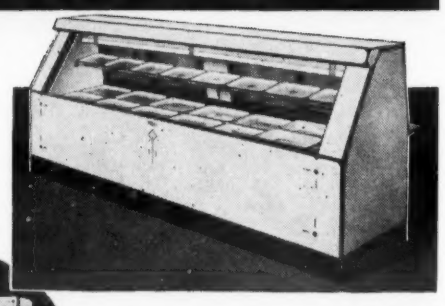
DISTRIBUTORS! Increase your sales and earnings on electrical refrigeration equipment by selling the Percival Line. Percival equipment meets every requirement of the modern food store.



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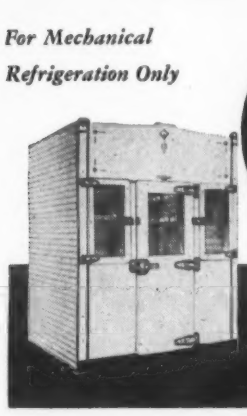

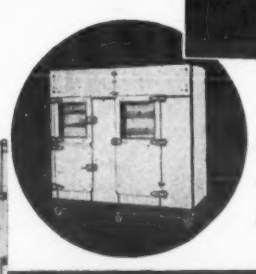

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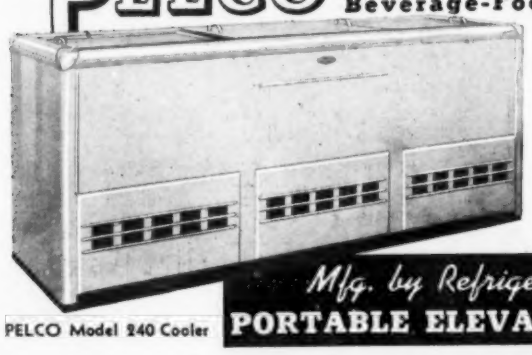

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PELCO outperforms any other cooler you've ever seen! You can reload it every 30 minutes! Makes its own floating ice, automatically, as needed. Any place that sells bottled beverages is a prospect.

Complete line. For money-saving trade-building performance, wise buyers choose PELCO. Get the facts! Address Desk A107.

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Mfg. by Refrigeration Division

PORTABLE ELEVATOR MFG. CO. BLOOMINGTON, ILLINOIS

in Canada UNIVERSAL COOLER CO. of CANADA Ltd. Brantford, Ontario

Table 36—Window Areas

Width Ft.	In.	Depth 3 Ft.	3½ Ft.	4 Ft.	4½ Ft.	5 Ft.	5½ Ft.	6 Ft.	6½ Ft.	7 Ft.	8 Ft.	9 Ft.	10 Ft.	12 Ft.	14 Ft.	16 Ft.	18 Ft.	20 Ft.
2	0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	16.0	18.0	20.0	24.0	28.0	32.0	36.0	40.0
2	6	7.5	8.8	10.0	11.3	12.5	13.8	15.0	16.3	17.5	20.0	22.5	25.0	30.0	35.0	40.0	45.0	50.0
3	0	9.0	10.5	12.0	13.5	15.0	16.5	18.0	19.5	21.0	24.0	27.0	30.0	36.0	42.0	48.0	54.0	60.0
3	6	10.5	12.3	14.0	15.8	17.5	19.3	21.0	22.8	24.5	28.0	31.5	35.0	42.0	49.0	56.0	63.0	70.0
4	0	12.0	14.0	16.0	18.0	20.0	22.0	24.0	26.0	28.0	32.0	36.0	40.0	48.0	56.0	64.0	72.0	80.0
4	6	13.5	15.8	18.0	20.3	22.5	24.8	27.0	29.3	31.5	36.0	40.5	45.0	54.0	63.0	72.0	81.0	90.0
5	0	15.0	17.5	20.0	22.5	25.0	27.5	30.0	32.5	35.0	40.0	45.0	50.0	60.0	70.0	80.0	90.0	100.0
5	6	16.5	19.3	22.0	24.8	27.5	30.3	33.0	35.8	38.5	44.0	49.5	55.0	66.0	76.0	88.0	99.0	110.0
6	0	18.0	21.0	24.0	27.0	30.0	33.0	36.0	39.0	42.0	48.0	54.0	60.0	72.0	84.0	96.0	108.0	120.0
6	6	19.5	22.8	26.0	29.3	32.5	35.8	39.0	42.3	45.5	52.0	58.5	65.0	78.0	91.0	104.0	117.0	130.0
7	0	21.0	24.5	28.0	31.5	35.0	38.5	42.0	45.5	49.0	56.0	63.0	70.0	84.0	98.0	112.0	126.0	140.0
7	6	22.5	26.3	30.0	33.8	37.5	41.3	45.0	48.8	52.5	60.0	67.5	75.0	90.0	105.0	120.0	135.0	150.0
8	0	24.0	28.0	32.0	36.0	40.0	44.0	48.0	52.0	56.0	64.0	72.0	80.0	96.0	112.0	128.0	144.0	160.0
8	6	25.5	29.8	34.0	38.3	42.5	46.8	51.0	55.3	59.5	68.0	76.5	85.0	102.0	119.0	136.0	153.0	170.0
9	0	27.0	31.5	36.0	40.5	45.0	49.5	54.0	58.5	63.0	72.0	81.0	90.0	108.0	126.0	144.0	162.0	180.0
9	6	28.5	33.3	38.0	42.8	47.5	52.3	57.0	61.8	66.5	76.0	85.5	95.0	114.0	133.0	152.0	171.0	190.0
10	0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	80.0	90.0	100.0	120.0	140.0	160.0	180.0	200.0
10	6	31.5	36.8	42.0	47.3	52.5	57.8	63.0	68.3	73.5	84.0	94.5	105.0	126.0	147.0	168.0	189.0	210.0
11	0	33.0	38.5	44.0	49.5	55.0	60.5	66.0	71.5	77.0	88.0	99.0	110.0	132.0	154.0	176.0	198.0	220.0
11	6	34.5	40.3	46.0	51.8	57.5	63.3	69.0	74.8	80.5	92.0	103.5	115.0	138.0	161.0	184.0	207.0	230.0
12	0	36.0	42.0	48.0	54.0	60.0	66.0	72.0	78.0	84.0	96.0	108.0	120.0	144.0	168.0	192.0	216.0	240.0
12	6	37.5	43.8	50.0	56.3	62.5	68.8	75.0	81.3	87.5	100.0	112.5	125.0	150.0	175.0	200.0	225.0	250.0
13	0	39.0	45.5	52.0	58.5	65.0	71.5	78.0	84.5	91.0	104.0	117.0	130.0	156.0	182.0	208.0	234.0	260.0
13	6	40.5	47.3	54.0	60.8	67.5	74.3	81.0	87.8	94.5	108.0	121.5	135.0	162.0	189.0	216.0	243.0	270.0
14	0	42.0	49.0	56.0	63.0	70.0	77.0	84.0	91.0	98.0	112.0	126.0	140.0	168.0	196.0	224.0	252.0	280.0
14	6	43.5	50.8	58.0	65.3	72.5	79.8	87.0	94.3	101.5	116.0	130.5	145.0	174.0	203.0	232.0	261.0	290.0
15	0	45.0	52.5	60.0	67.5	75.0	82.5	90.0	97.5	105.0	120.0	135.0	150.0	180.0	210.0	240.0	270.0	300.0

Methods of Figuring Sensible Cooling Load for Commercial Installations

(*Continued from Page 23, Column 3*)

generally allows and demands that more money be spent for engineering skill and experience. Nevertheless, the highly competitive state of the industry demands low cost which in turn demands that field engineering methods be kept as simple and easy as can be made to conform with the required degree of accuracy.

Seasonally speaking, there are two types of loads to be considered in year-around air-conditioning work, cooling and dehumidifying, and heating and humidifying.

SUMMER SENSIBLE LOAD

The cooling, or summer sensible load, consists of the following portions:

Transmission Load.
Sun Load.
Appliance Load.
Illumination.
Occupancy Load.
Outside Air Load.

SUMMER LATENT LOAD

The dehumidifying or summer latent load consists of the following portions:

Occupancy Load.
Outside Air Load.
Appliance Air Load.

The heating, or winter sensible load, consists of the following portions:

Transmission Load.
Outside Air Load.

The humidifying or winter latent load consists of the moisture lost from the conditioned space due to the outside air load.

Cooling Load

A. SENSIBLE LOADS

1. *Sun and Transmission Loads.* Sun load is the heat load which enters the conditioned space because of direct exposure to the sun's rays.

Transmission load is the load which enters the conditioned space because of the temperature differential between the dry-bulb temperatures outside and inside the conditioned space.

If a low-priced installation is especially desirable, or if the average length of occupancy of each person is in the neighborhood of 15 minutes, a 10° differential between outside and inside temperature may be used as the basis of design. Otherwise, the acceptance of a 15° differential is almost universal.

To determine the sun and/or transmission load upon any surface, multiply the square foot area of the surface (note that areas may be read from Tables 36 and 37, without the necessity of computation), by the proper factor from Table No. 35, selected according to the following directions and explanations. After the loads upon all surfaces have been so estimated, the entire sun and transmission load is determined by summating the various area loads.

HOURLY LOAD CALCULATION

1. To compute the hourly load upon a surface, multiply the area of the surface in square feet by the proper factor given by this table. Cooling loads will be in *B.t.u. per hour.*

2. Heat leakage factors are based upon a temperature difference during the cooling season of 15°, between the outside dry-bulb temperature and the dry-bulb temperature within the conditioned space. For other temperature differentials the factors should be changed proportionately. (For a 10° differential, multiply factors by 0.67.)

3. Heat leakage factors are based upon average good construction. Due allowance must be made in cases where such conditions do not exist.

4. Never apply both the factor in column "D" and the factor in column "E" to the same surface, because the factor in column "E" includes both transmission and sun effect.

UNPROTECTED WINDOWS

5. For unprotected windows or skylights use double the factor in column "E" for the glass "with shades."

6. For *top floor* spaces, if occupancy varies less than 60% during daylight hours, use factors from column "E" for the roof, and for the windows of the exposure having greatest window area (except for north exposure). Use factors from column "D" for other surfaces.

7. For spaces *not* on top floor, if occupancy varies less than 60% during daylight hours, use factors from column "E" for heaviest wall and window exposure (except north). Column "D" for other surfaces.

HEAVY OCCUPANCY FACTOR

8. If occupancy is 60% heavier between noon and 1 p.m. than during the remainder of the day, use factor from column "E" for east wall and south windows. Use factors from column "D" for other surfaces.

9. If occupancy is 60% heavier between 5 p.m. and 7 p.m. than during the remainder of the day, use factor from column "E" for west windows and for roof (or west windows and west wall if space is not on top floor). Use factors from column "D" for other surfaces.

10. If occupancy is 60% greater both between noon and 1 p.m. and between 5 and 7 p.m., base the equipment selection upon paragraph No. 8 or No. 9 above, depending upon which condition shows the heavier load.

11. If peak occupancy occurs less than two hours after sundown and is 60% heavier than during daylight hours, use factor from column "E" for west wall (not for west windows). Use factor from column "D" for other surfaces.

12. Do not figure heat gain through heavy interior masonry partitions or wall unless some specially heavy source of heat gain exists.

Items Nos. 6, 7, 8, 9, 10 and 11 take into account the "lag" in time of heat passage through the usual type of construction, as well as the transmission coefficients, for the construction.

"Lag" is discussed, and the lag for various typical constructions is given in Section 20, Part 1.

The "lag" of time required for the sun's heat to pass through a structure plays an important part in determining the maximum load for projects of heavy fluctuating occupancy, for this lag determines whether or not the arrival of the sun load *within* the conditioned space coincides with an occupancy peak. The effect of lag will be included if the above directions are followed.

OCCUPANCY LOAD

2. *Occupancy Load.* The sensible occupancy load is the heat given off by the occupants. It is computed by multiplying the number of occupants by the proper factor as taken from Table No. 18. Table No. 17 will be of assistance in estimating the probable occupancy which will occur upon various types of projects.

Considerable care must be exercised in estimating the probable occupancy as the load should not necessarily be based upon the total number of persons who visit the conditioned space per hour, but should be based upon the maximum number of "hour occupants." The number of "hour occupants" may be estimated by multiplying the number of persons who occupy the space during one hour by their average period of occupancy in minutes, and dividing the result by 60.

OUTSIDE AIR LOAD

3. *Outside Air Load.* The outside air load consists of the heat that must be removed from the outside air which is introduced into the conditioned space in order to cool it from the outside dry-bulb to the inside dry-bulb temperature.

The quantity of outside air per hour may be estimated by the method given under Part No. 1 or Part No. 2 or Part No. 3 (never use more than *one* method) of Table No. 13, using only the method giving the greater air quantity. This generally is the method described under Part No. 1, except upon projects of light occupancy in relation to outside exposure.

After having estimated the air quantity per hour (c.f.h.), read the sensible outside air load from Table No. 16, generally using a temperature drop of 15°, or compute by multiplying the cubic feet of ouside air per hour by 0.25 for a differential of 15° between outside and inside, or by 0.17 for a 10° differential.

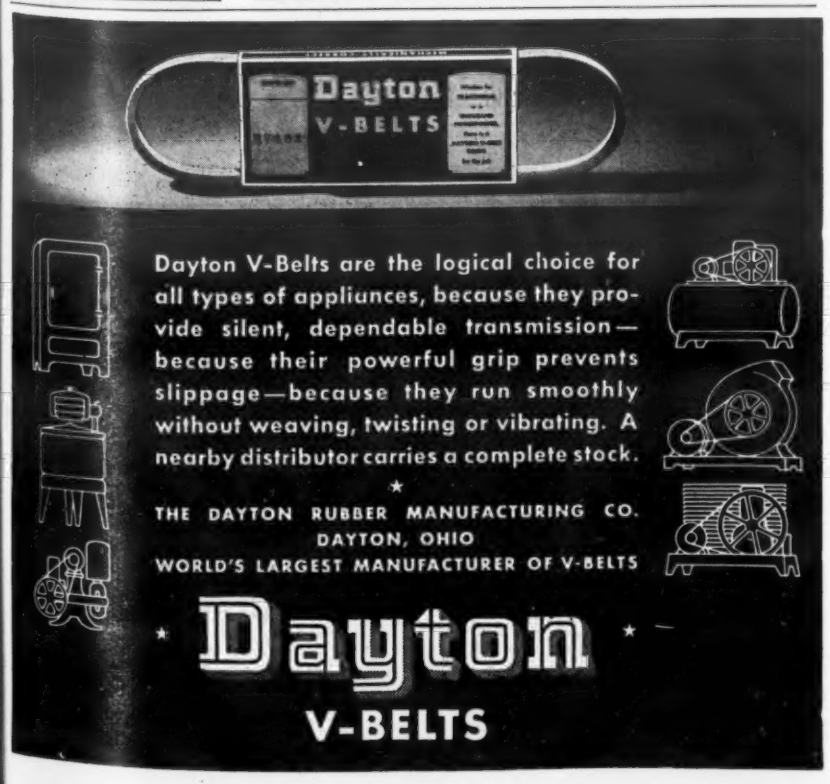
4. *Appliance Load.* The appliance load consists of the sensible heat given off by various heat producing appliances. It is estimated by multiplying

(*Concluded on Page 25, Column 3*)

Table 37—Area of Plane Surfaces

Width Ft.	Length (Feet)															
	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
5	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
6	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120
7	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140
8	40	48	56	64	72	80	88	96	104	112	120	128	136	144	152	160
9	45	54	63	72	81	90	99	108	117	126	135	144	153	162	171	180
10	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200
11	55	66	77	88	99	110	121	132	143	154	165	176	187	198	209	220
12	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
13	65	78	91	104	117	130	143	156	169	182	195	208	221	234	247	260
14	70	84	98	112	126	140	154	168	182	196	210	224	238	252	266	280
15	75	90	105	120	135	150	165	180	195	210	225	240	255	270	285	300
16	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320
18	90	108	126	144	162	180	198	216	234	252	270	288	306	324	342	360
20	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400
22	110	132	154	176	198	220	242	264	286	308	330	352	374	396	418	440
24	120	144	168	192	216	240	264	288	312	336	360	384	408	432	456	480
26	130	156	182	208	234	260	286	312	338	364	390	416	442	468	494	520
28	140	168	196	224	252	280	308	336	364	392	420	448	476	504	532	560
30	150	180	210	240	270	300	330	360	390	420	450	480	510	540	570	600
32	160	192	224	256	288	320	352	384	416	448	480	512	544	576	608	640
34	170	204	238	272	306	340	374	408	442	476	510	544	578	612	646	680
36	180	216	252	288	324	360	396	432	468	504	540	576	612	648	684	720
38	190	228	266	304	342	380	418	456	494	532	570	608	646	684	722	760
40	200	240	280	320	360	400	440	480	520	560	600	640	680	720	760	800
42	210	252	294	336	378	420	462	504	546	588	630	672	714	756	798	840
44	220	264	308	352	396	440	484	528	572	616	660	704	748	792	836	880
46	230	276	322	368	414	460	506	552	598	644	690	736	782	828	874	920
48	240	288	336	384	432	480	528	576	624	672	720	768	816	864	912	960
50	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000

Width Ft.	Length (Feet)														
	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50
5	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
6	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300
7	154	168	182	196	210	224	238	252	266	280	294	308	322	336	350
8	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400
9	198	216	234	252	270	288	306	324	342	360	378	396	414	432	450
10	220	240	260	280	300	320	340	360	380	400	420	440	460	480	500
11	242	264	286	308	330	352	374	396	418	440	462	484	506	528	550
12	264	288	312	336	360	384	408	432	456	480	504	528	552	576	600
13	286	312	338	364	390	416	442	468	494	520	546	572	598	624	650
14	308	336	364	392	420	448	476	504	532	560	588	616	644	672	700
15	330	360	390	420	450	480	510	540	570	600	630	660	690	720	750
16	352	384	416	448	480	512	544	576	608	640	672	704	736	768	800
18	396	432	468	504	540	576	612	648	684	720	756	782	828	864	900
20	440	480	520	560	600	640	680	720	760	800	840	880	920	960	1000
22	484	528	572	616	660	704	748	792	836	880	924	968	1012	1056	1100
24	528	576	624	672	720	768	816	864	912	960	1008	1056	1104	1152	1200
26	572	624	676	728	780	832	884	936	988	1040	1092	1144	1196	1248	1300
28	616	672	728	784	840	896	952	1008	1064	1120	1176	1232	1288	1344	1400
30	660	720	780	840	900	960	1020	1080	1140	1200	1260	1320	1380	1440	1500
32	704	768	832	896	960	1024	1088	1152	1216	1280	1344	1408	1472	1536	1600
34	748	816	884	952	1020	1088	1156	1224	1292	1360	1428	1496	1564	1632	1700
36	792	864	936	1008	1080	1152	1224	1296	1368	1440	1512	1584	1656	1728	1800
38	836	912	988	1064	1140	1216	1292	1368	1444	1520	1596	1672	1748	1824	1900
40	880	960	1040	1120	1200	1280	1360	1440	1520	1600	1680	1760	1840	1920	2000
42	924	1008	1092	1176	1260	1344	1428	1512	1596	1680	1764	1848	1932	2016	2100
44	968	1056	1144	1232	1320	1408	1496	1584	1672	1760	1848	1936	2024	2112	2200
46	1012	1104	1196	1288	1380	1472	1564	1656	1748	1840	1932	2024	2116	2208	2300
48	1056	1152	1248	1344	1440	1536	1632	1728	1824	1920	2016	2112	2208	2304	2400
50	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	2500



Ways of Estimating Miscellaneous Load In Commercial Jobs

(*Concluded from Page 24, Column 5*)

the proper factor taken from Table No. 19, by the number of heat producing appliances which are used during the peak load hour, and multiplying the result by the fraction of the peak hour that such appliances are used.

The final result should be multiplied by 50% if the appliance is located under a canopy from which not less than 100 c.f.m. is exhausted per square foot of active horizontal area, or by 10% to 25% if it is located adjacent to an opening through which a considerable quantity of air is exhausted.

Furthermore, note should be made of the percent of its maximum heating producing rate at which the appliance is used during the peak hour. For example, a coffee urn may be turned down to 10% of its maximum heating capacity during the occupancy hour, merely to keep warm the coffee that has been made prior to the peak hour.

5. *Illumination Load.* The illumination load is the heat given off by the illuminating fixtures. It is estimated by multiplying by 3.4 the maximum number of watts which are used for illumination during the peak load hour (only when the sun is shining, if the peak load hour occurs during the period of sunlight).

6. *Entire Sensible Load.* The computed sensible load must be the maximum sensible load that occurs *at the same time.* It is obtained by summating the above loads which occur simultaneously during the peak load hour.

If the sun plus transmission load is less than 20% of the entire sensible load, 1% must added to the sensible capacity of the equipment for every 1% which the sun plus the transmission load falls short of being 20% of the entire sensible load.

Hotel House Tanks Use Water from Condenser

LINCOLN, Neb. — Providing against a water waste problem in the air-conditioning system installed in the Capital hotel here by Natkin & Co., Westinghouse distributor, was part of the designing and construction of the system.

The system for the 10-floor hotel, which contains 250 rooms, was designed so that water is taken from the condenser and piped into an overflow tank, from which it is pumped to the house tanks on the roof.

These house tanks supply the toilets and service sinks in the building. Demands of the hotel are such that 50% of the water is utilized for this service.

To prevent vibration, the compressor and fan and fan motor of the air-conditioning unit are mounted on a 6-inch concrete pillow, which in turn rests on 2 inches of ordinary cork-board. The fan and compressor are bolted down tightly to the concrete pillow, and "grouted" by the use of 3/32-in. steam gasket material underneath the pedestals and bases.

As the fan is connected with canvas to the duct system on both suction and discharge openings, no vibration is transmitted to any portion of the building.

Corozone Builds Heater For Gas or Oil

CLEVELAND—The Corozone Air Conditioning Corp. has just introduced a new "Coroaire" heater and winter air conditioner, available either as a gas or oil burning heater.

Features claimed for the Coroaire are: fan circulation, 600 cu. ft. capacity, summer and winter operation; humidification, 2-gallon capacity; filtration, winter and summer; ionization, deodorizing, purifying, and revitalizing; and hourly heating output of 41,500 B.t.u.

Finish of the unit is burled walnut. The unit is especially designed for small homes, bungalows, summer cottages, stores, small business establishments, recreation rooms, play rooms, shops, and factories.

Brine Holdover Portable Cooling Unit Made by General Refrigeration for Eastern Air Lines

BELOIT, Wis.—Portable air-conditioning units of the brine holdover type for cooling or heating grounded airplanes are being manufactured by General Refrigeration Sales Co. for Eastern Air Lines.

Like the units made by the same company for American Airlines, Inc. (AIR CONDITIONING AND REFRIGERATION NEWS, July 14, 1937, pages 20-21), the new machines are installed in specially built compartments mounted on standard speed-truck chasses.

The two types of portable airplane air conditioners differ, however, in that the refrigerating apparatus in the one designed for American Airlines operates directly and only while attached to the airplane, whereas the condensing unit in that built for Eastern Air Lines operates in regular cycles whether connected or not to a plane.

Another difference is that the first type is completely self-contained, while the brine holdover type requires an outside source of power.

HOW IT COOLS

For summer cooling, the brine holdover conditioner takes in warm outside air, passes it through filters into a cooling unit, reduces the air temperature and humidity, and delivers the cool, fresh air into the cabin of the airplane through a large hose.

The necessary refrigerating capacity for the cooling unit is provided by means of a large holdover tank containing a refrigeration coil and freezing solution. The latter is cooled and partially frozen by the operation of the refrigerating machine during the charging cycle, which usually lasts overnight while the truck is not in demand.

After the completion of the charging operation, the holdover tank contains sufficient cold brine and ice to provide refrigeration for the cooling of several airplanes.

While the unit is stationed next to an air liner to condition its cabin, a long electric cable must be extended from one of the airport buildings to the truck to provide the necessary electric power for the operation of the blowers and brine circulating pumps, which deliver the cold solution to the cooling coils.

For winter heating, cold outside air is delivered through filters, over the heating coil, and there warmed to the desired temperature. The heating is accomplished by circulating hot brine from the holdover tank through the coil. The brine itself is heated either by means of a steam coil having outside steam connections or from electric immersion coils in the tank.

Transmission of the heated air from the unit to the interior of the plane cabin is by means of the same hose used for cool air in summer.

The complete air-conditioning unit is mounted on a steel frame built to fit onto the truck chassis, and is enclosed in a sheet steel body with removable top. Refrigeration and steam coils are in the brine tank, and above the tank are located the air-conditioning coil with filter, blower, and air silencer and a vertical type brine pump.

CONSTRUCTION OF UNIT

The refrigerating unit is connected to the cooling coil in the tank, which is provided with a drain valve and a hose connection for filling. There are also two steam hose connection fittings for the steam coils.

Two standard air filters and a header-type cooling coil, through which the brine is circulated, are contained in the air-conditioning unit itself. As in the unit designed for American Airlines, the end of the air hose is provided with a special bayonet connection to fit into the inlet of the plane.

The conditioning unit is thickly insulated, and has a drain for the disposal of the condensate from the coils when on the cooling cycle.

Fins on the refrigerating coil extend completely across the tank, and are arranged as baffles to cause the brine to circulate over and under them, thereby insuring a more uniform temperature.

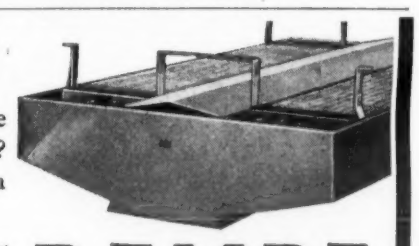
The circulating pump which delivers the water from the tank to the air-conditioning coil is mounted vertically and is submerged below the water level of the tank to eliminate priming difficulties and packing box troubles. When the pump is inoperative, the water drains from conditioning coil into the tank.

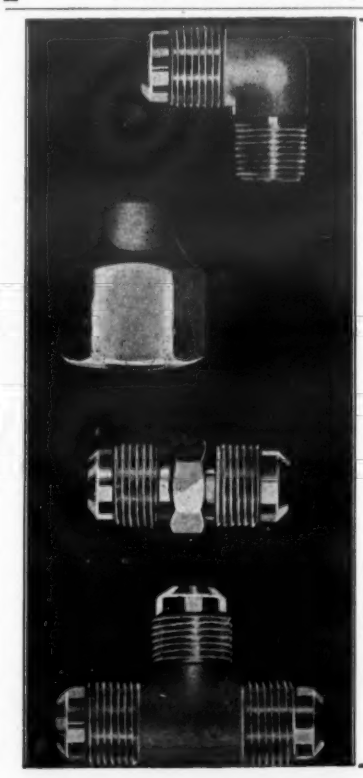
Refrigeration equipment consists of a 3-hp. commercial unit composed of a compressor, motor, air-cooled condenser, and receiver.

The refrigerant passes through the liquid line strainer, magnetic valve, heat interchanger, and thermostatic expansion valve to the refrigerating coil in the brine tank. A thermostat with high pressure cutout is provided for protection of the equipment.

The necessary 3-phase, 220-volt, 60-cycle electric current is supplied by means of a cable attached to an outlet connection on the truck.

When in service, the blower and the brine pump motors are provided with 110-volt, 60-cycle, single-phase current through an electric supply line kept on a reel under the rear of the truck. Both the 3-phase and single-phase cables are provided with an extra line for ground.





Air Conditioning Surveys

On this and the following page, AIR CONDITIONING AND REFRIGERATION NEWS presents detailed surveys from major population centers showing where air-conditioning systems providing comfort cooling were installed during the first six months of 1936, the type of establishment in which it was installed, and the make and size of equipment used.

Information published in this survey was made available by the operating utility companies in the territories covered. A similar compilation was published in the Sept. 22 issue.

Birmingham, Ala. (Compiled by Birmingham Electric Co.)

Name	Make of Equipment	Hp.
Barber & Beauty Shops		
Five Points Barber Shop	Howe	3.33
Blach's (beauty shop)	Airtemp	6.0
Pandora Beauty Shop	Howe	11.0
Funeral Homes		
Brown Service (Johns)	Carrier	2.25
Luquire	Westinghouse	15.0
Rideout Funeral Co.	Airtemp	16.0
Industrial Hospital		
American Cast Iron Pipe Co.	Carrier	25.8
Laboratory		
Alpha Portland Cement Co.	Carrier	3.25
Offices		
Birmingham Electric Co.	Airtemp	10.0
Bradley Baldwin All & White	Airtemp	1.0
Frigidaire Corp.	Frigidaire	.75
Roy Gridley	Airtemp	2.0
R. R. Myer	Carrier	1.5
Southern Dairies	Frick	1.0
U. S. Federal Court	Carrier	28.5
Restaurants		
Bankhead Hotel	Carrier	15.0
Birmingham Athletic Club (3rd Floor)	Airtemp	6.66
Birmingham Country Club	Airtemp	3.0
Casino	Airtemp	13.0
Thomas Jefferson Hotel	Frick	40.0
Paramount	Westinghouse	12.5
San Sa Gai	Airtemp	6.33
Tutwiler Continental Room	Carrier	40.0
Stores		
Adorable Dress Shop	Airtemp	3.25
Burger Phillips (6th Floor)	York	26.2
Fan Tan Shop	Airtemp	3.33
Florsheim Shoe Co.	Carrier	3.25
Grayson's	Trane-Curtis	15.0
Kress	Carrier	367.0
Lerners	Westinghouse	16.5
Odum Bowers & White	Westinghouse	31.25
Odum Clothing Co.	Westinghouse	18.5
Pizitz	York	587.5
Virginia Dare Shop	York	8.5
Theaters		
Empire	Carrier	58.0
Galax & Capitol	Carrier	63.0
Strand	Westinghouse	61.0
Miscellaneous		
Five Room Coolers (3 in offices; 2 in residences)		3.8
Total		1,530.45

THE BUYER'S GUIDE

TYLER'S WELDED STEEL REACH-IN BOX

SALES SENSATION OF 1937

Big waiting market for food stores, restaurants, bakeries, tap rooms. New principle "Stratosphere" coiling. Maximum efficiency and capacity in small floor space. Dealers report tremendous demand. Big sales opportunity. Write today.

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HIGHEST Filtrine EFFICIENCY
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SURGE TANKS
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KOLD-HOLD
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CONVERSION UNITS

Modernize old equipment . . provide much greater storage space for packaged goods . . eliminate brine leaks and attendant odors . . reduce weight and simplify installation . . require a minimum of service . . provide ideal temperatures under all conditions . . cost less to operate . . quickly and easily installed in any standard cabinet at small cost.

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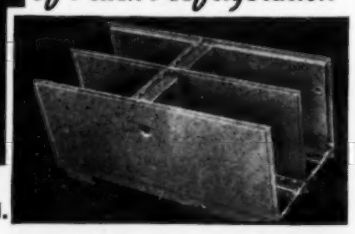
As Outstandingly Superior as the KOLD-HOLD System of Truck Refrigeration



Tulsa Clothing Store Is Air Conditioned By Delco-Frigidaire

TULSA, Okla.—A Delco-Frigidaire air-conditioning system was installed by W. W. Jenkins Air Conditioning Co. in Renberg's, Inc., one of Tulsa's oldest and largest clothing stores, as part of a general remodeling program.

The system serves the first and second floors of the 37-year old establishment and is designed to perform year-around air-conditioning functions. Remodeling operations permitted concealment of the air supply duct system by means of a new suspended ceiling on the store's first floor.

Equipment installed for cooling consists of a 25-ton compressor and evaporative condenser, with Conditionair of matched size, reports Warren Earl, sales manager of Howard E. Melton, Inc., Delco-Frigidaire distributor in Oklahoma with headquarters in Oklahoma City.

Winter heating is accomplished by the use of duct heaters in the fresh and is forced into the duct system which the air passes through filters and is forced into the duct system for even distribution throughout the conditioned area.

Operating economy was a guiding motive in the design of the system, Mr. Earl says, and each unit of the system is of matched design to give maximum performance at lowest possible maintenance cost.

Airtemp Equipped 200 Detroit Residences In Past 7 Months

DETROIT—More than 200 Airtemp residential air-conditioning units were installed in Detroit homes from March to September inclusive, reports H. B. Orr, general manager of Airtemp Construction Corp., Airtemp distributor. Almost an equal number of residential installations were made by the company in the rest of Michigan during that period, Mr. Orr declares.

Airtemp equipment has been selected by the Detroit Air Conditioning Institute for installation in the 1938 Builders' Show "Ideal Home," which will be opened to the public next year and awarded to the holder of the lucky ticket at the show, Mr. Orr states.

Engineers of Airtemp Construction Corp. already have started to draw plans for the Ideal Home installation, which will include the latest type of year-around Airtemp equipment. The company will occupy five booths at the Builders Show.

Among current promotional efforts of the distributorship is a 26-week radio program being broadcast every Monday at 9:30 p.m. over station WXYZ and six affiliated stations of the Michigan radio network. This program, known as the "Hour of Dreams," features baritone George Morgan, Airtemp dealer in Saginaw, Mich. Mr. Morgan used to appear with Madame Schumann-Heink.

Toridheet Announces New Distributors

CLEVELAND—Two new distributors and eight dealers have been appointed to handle the Toridheet line of oil burners manufactured by Toridheet division of Cleveland Steel Products Corp.

Kelley-How-Thompson Co., Duluth, Minn., will distribute the Toridheet line in North Dakota, South Dakota, norther Wisconsin, the upper peninsula of Michigan, and Minnesota, excluding the Minneapolis-St. Paul area.

A. A. Duckett, Inc., with headquarters Camden, N. J., now holds the Toridheet distributor franchise for the Philadelphia-Camden territory. Plans are under way for establishment of showrooms at Philadelphia and at Trenton, N. J.

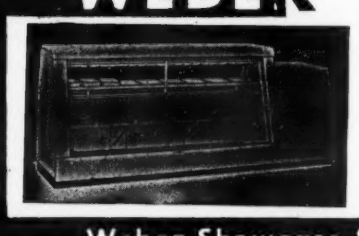
Newly appointed Toridheet dealers are: Peterboro Lumber Co., Peterboro, N. H.; Desautels Music Co., Manchaster, N. H.; David Halperin, West Brighton, N. Y.; Price & Nichols, Waynesboro, Pa.; Burns' Heating Co., Niagara Falls, N. Y.; Universal Supply Co., Newark, Ohio; H. W. Dyer & Son, Battle Creek, Mich.; J. E. O'Neil & Son, Clinton, Iowa.

Miami, Fla. Area (Compiled by Florida Power & Light Co.)

Name	Make of Equipment	Hp.	Rated Tons
Club			
Tri-ess Corp. (Picadilly Club), Miami Beach		13.8	10.0
Industrial Applications			
F. E. C. Railway Co. Station, Miami	Varies	80.0	60.0
Southern Bell Tel. & Tel. Beach Exchange, 69th St., Miami Beach		4.5	5.0
Edgewater Exchange, Miami	Delco-Frigidaire	7.5	6.0
Harrison Photo Laboratory, Inc., Miami	York	2.0	2.0
Offices			
American Bank & Trust Co., Miami	Delco-Frigidaire	1.3	0.7
Wallace Barbour, Inc., Miami Beach		4.3	3.0
Chase Federal Savings & Loan Assn., Miami Beach	Frigidaire	9.0	7.0
Dr. Leonard W. Haskin, Miami	Frigidaire	1.5	1.2
Henry Hohauser, architect, Miami Beach	Airtemp	3.5	1.5
Mershon Law Office, First Trust Bldg., Miami	Carrier	1.0	0.8
National Title Co., Miami Beach	Airtemp	3.3	3.0
Dr. S. Ney, dentist, Daytona Beach		1.0	0.8
Paramount Ent. Olympia Bldg., Miami Paramount Offices	Frigidaire	9.4	7.0
Pittman	Airtemp	3.6	3.0
Pittsburgh Plate Glass Co., Miami	Carrier	13.5	7.5
T. H. Radford, Live Oak	Norge	1.0	0.8
Residences and Rooms			
Alcazar Hotel, Miami		80.0	70.0
S. Black, Miami	Delco-Frigidaire	1.5	0.75
J. E. Calkins, Coral Gables	Delco-Frigidaire	1.5	0.75
George Worley, Miami	Delco-Frigidaire	3.5	1.5
Restaurants, Cafes, Bars, Etc.			
Morrison's Cafeteria, West Palm Beach	York	27.6	20.0
Neptune Grill, St. Augustine	Merchant & Evans	13.7	10.0
C. J. Reese, Jr. (bar & grill), Daytona Beach	Airtemp	3.0	3.0
Stores			
Cannon Shoe Co., Miami		8.2	6.5
Cowen-Nankin Shoe Store, Inc., Miami	Carrier	12.0	8.0
Dade Drug Co., Coral Gables	Airtemp	13.0	10.8
Electric Service, Inc., Daytona Beach	Airtemp	3.1	3.0
Miss Marie Gordon, Miami	Airtemp	3.0	2.5
Liggett Drug Co., Daytona Beach		16.8	15.0
Lucille Shop, St. Augustine	Merchant & Evans	13.7	10.0
Mangels of Florida, Inc., Miami	Carrier	10.8	7.5
Nankin Shoe Store, Miami	Frigidaire	4.0	2.5
Richter's Jewelry Store, Inc., Miami	Frigidaire	4.0	2.5
Walgreen's (drug store), Ft. Lauderdale		20.0	15.0
Theaters			
Mayfair, Miami	Carrier	52.5	47.0
Sheridan (Paramount Ent.), Miami Beach	Carrier	88.5	66.0
W. P. B. Theater, Inc., West Palm Beach	General Electric	85.2	70.0
Total		625.8	491.6

THE BUYER'S GUIDE

SIX NEW CASES BY WEBER — New Steps to PROFIT



The most complete line of Refrigeration Equipment — New Streamlined Beauty — Unchallenged quality. Exclusive Territories Now Available — Complete Financing Plan.

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"CHIEFTAIN"
QUALITY-BUILT COMPRESSORS and CONDENSING UNITS

All bearings diamond bored. Positive lubrication of parts by newly developed process plus forced feed lubrication in all models.

Sizes 1/6, 1/5, 1/4, 1/3 h.p.
Write for prices

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BUSHINGS
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SEAL NOSES

COMPRESSOR SEALS

Made of "SABECO" Bronze wear longer. Correct tin content gives "SABECO" toughness. There is less seal wear. High lead content preserves lubricant film. Low impurity percentage (less than 2/10 of 1%) assures free running and no scored shafts. Suitable for all refrigerants. Send blueprints for quotation and further details.

Fredericksen Company
Saginaw, Michigan

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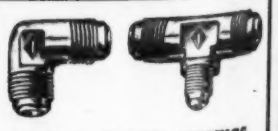
FITTINGS THAT WILL STAY TIGHT

IMPERIAL S. A. E. flared fittings have been setting a mighty fast pace in the air conditioning and refrigeration field . . . and their rapid acceptance by installation and service men is based on *results*. Imperial fittings are tight when the job is finished and they *stay* tight.

Write for catalog covering complete listing of sizes and prices.

IMPERIAL BRASS MFG. CO., 565 S. Racine Ave., Chicago



S. A. E. FLARED FITTINGS
Brass forged nuts, tees, elbows and crosses — will not crack. Heavier and stronger than standard—non-porous—no seepage or season cracking. Tees and elbows have flats for wrench.

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VALVES • TOOLS • CHARGING LINES • FLOATS • DEHYDRATORS • STRAINERS

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PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Air Conditioning and Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS WANTED

OFFICE MANAGER—Credit Man—Accountant—35, married, desires connection with a reliable organization. Seventeen years with large financial institution. Thoroughly versed thru practical experience. Can furnish very best of references as to ability and character. Accustomed to managing large office force. Box 977, Air Conditioning and Refrigeration News.

GRADUATE MECHANICAL Engineer, Utilities Engineering Institute graduate, 27, desires position with manufacturer, distributor, contractor in air conditioning or refrigeration. Will make good engineer, sales engineer, or service-installation man. Excellent references. Equipped to travel. Prefer West or Mid-West but opportunity most important. Box 981, Air Conditioning and Refrigeration News.

FRANCHISES AVAILABLE

COMPLETE LINE OF REFRIGERATOR Display Cases, Walk-In Coolers, and Refrigerators for Meat Markets, Grocers, Restaurants, etc. Sell with Ehrlich line of Compressors, or with any other line of Machines. Attractive discounts, also liberal financing arrangements to help sell. 69 years in business. Write for full information and catalog.
H. EHRLICH & SONS MFG. CO.
REFRIGERATOR BUILDERS
St. Joseph, Mo.

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AN EXPERIENCED COMMERCIAL REFRIGERATION ORGANIZATION WITH COMPLETE SELLING, ENGINEERING, INSTALLATION AND SERVICE FACILITIES IS INTERESTED IN SECURING EXCLUSIVE DISTRIBUTOR'S FRANCHISE IN METROPOLITAN NEW YORK DISTRICT. BOX 980, AIR CONDITIONING AND REFRIGERATION NEWS.

EQUIPMENT FOR SALE

ATTENTION! SERVICEMEN and Dealers: New Delco ⅛ hp. single phase, 110 V., 60 cycle, rubber mounted motors $7.45. ⅛ hp. condensers $1.15, ¼ hp. $1.50. Mullins Evaporators, 3 tray $4.50, 4 tray $5.25. Universal compressors $27.50—worth twice that. Special quantity prices on request. Write for complete catalog of supplies. We reserve the right to limit quantities on the above specials. AIRO SUPPLY COMPANY, Eastern office, 17 W. 60th St., New York, N. Y. Main office, 2730 N. Ashland Ave., Chicago, Ill.

WE HAVE ON HAND brand new, in original crates, several Larkin vacuum plate coils 7" and 16" wide and 80", 104" and 128" long which we offer at from ¼ to ⅓ of list price and subject to prior sale. We solicit your inquiry by wire, phone, or letter. A real bargain is offered in this type of coil for anyone interested. HOLCOMB & HOKE MFG. CO., 1545 Van Buren St., Indianapolis, Ind.

ATTENTION SERVICE MEN! Do you have an extra or spare Frigidaire compressor body? Can supply the following models at once. These may be had either reoperated and guaranteed or as is. Models Twin S, G, K, O, L, Y, N, C. Also sump tanks for all models. Can supply a limited amount of motors 110, 220, 60 cycle, from a ¼ hp. to a 1 hp. Prices for above items may be had on request. REFRIGERATION SURPLUS JOBBERS, 5622 Woodland Ave., Cleveland, Ohio.

SERVICEMEN AND DEALERS save money. Buy "used as is" refrigerators. Spray and recondition them yourself. Kelvinators $12.00; Frigidaires $15.00; Copelands $14.00; Bohns $14.00; General Electric $15.00; Majestics $12.50; Electrolux $25.00; others $10.00. Closeout ten 5½ cu. ft. 1936 Stewart-Warners $84.75 each. PILGRIM REFRIGERATION CO., 45-33 50th Street, Woodside, L. I., N. Y.

REPAIR SERVICE

DOMESTIC REFRIGERATION controls repaired. Ranco pencil types, $1.75. General Electric, Cutler-Hammer, Tag, Penn, Ranco box types, $2.00. Bishop Babcock, Majestic, Penn magnetic switches, $2.50. Each control individually calibrated to factory specifications. UNITED SPEEDOMETER REPAIR CO., INC., 436 West 57th St., New York City.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. VAN DEVENTER (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

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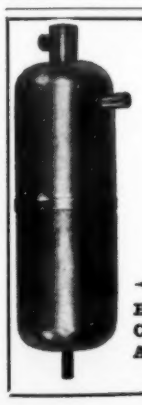
TRADEMARKS

AIR CONDITIONING SURVEYS

Omaha, Neb. (Compiled by Nebraska Power Co.)

Name	Make of Equipment	Hp.
Beauty School		
Capitol Beauty School, 1918 Farnum	Frigidaire	34.5
Clubs, Recreation Rooms, Etc.		
Caesar's Country Club, 1403 S. 75th	Lipman	22.66
Model Billiard Parlor, 1322 Douglas	Lipman	6.0
Omaha Athletic Club, 17th & Douglas	Frigidaire	70.0
Omaha Club, 2002 Douglas	Fairbanks-Morse	5.75
Palace Billiards, 1318 Douglas	Frigidaire	11.33
Plamore Billiards, 1818 Farnam	General Electric	22.66
State Recreation Parlor, 1412 Farnam	Brunner	5.5
Venetian Club, 2553 Farnam	Frigidaire	9.0
Funeral Homes		
Hoffman Mortuary, 24th & Dodge	Carrier	18.0
Kunold Mortuary, 4423 S. 24th	York	9.33
Hospital		
Clarkson Hospital, 26th & Dewey	Frigidaire	6.0
Hotels		
Blackstone Hotel, 36th & Farnam	Frigidaire	28.0
Fontenelle Hotel, 18th & Douglas	Baker-Trane	260.0
Hill Hotel, 16th & Howard	Frigidaire	33.0
Rome Hotel, 16th & Jones	Frigidaire	48.0
Industrial Applications		
Farmcrest Dairy, 720 S. 24th	Airtemp	3.33
Gland-O-Lac, 19th & Leavenworth	Brunner	20.0
Inland Construction Co., 3867 Leavenworth	Airtemp	9.0
Stover's Candy, 302 S. 16th	Baker-Trane	3.5
Offices		
Braun, Ray & Finley Co., 527 Grain Exc.	Airtemp	3.33
Crofoot-Fraser-Connaly & Stryker, 637 Omaha Nat'l Bank Bldg.	Baker-Trane	8.5
Fairbanks-Morse Co., Ninth & Harvey	Fairbanks-Morse	3.0
Fell & Pinkerton Co., 635 Keeline Bldg.	Airtemp	3.33
Goldstein Chapman, 16th & Farnam	Airtemp	3.33
D. Fay Hosman, 1819 Farnam	Westinghouse	18.0
Sam House, 514 S. 16th	Frigidaire	11.33
Ethel Huff, 1815 Jackson	Frigidaire	0.66
Pete Loch, Redick Tower	Frigidaire	5.5
Midwest Adjustment Co., 1221 Farnam	Frigidaire	3.0
Nebraska Power Co., 2314 "M"	Baker-Trane	10.5
Northrup-Jones, 1617 Farnam	York	34.66
Paxton-Mitchell Co., 2614 Martha	Baker-Trane	3.5
R.K.O. Pictures, Inc., 1508 Davenport	Carrier	9.5
University of Nebraska, 42nd & Dewey	Frigidaire	1.0
Winthrop-Mitchell, Farnam Bldg.	Carrier	0.75
Residences		
Walter Beebe, 1728 S. 32nd	Carrier	4.0
G. L. DeLacy, 138 N. 66th	General Electric	4.0
H. M. Doorly, Fairacres	General Electric	5.33
A. H. Erickson, 680 N. 56th	General Electric	5.33
R. D. Goldberg, 104 N. 48th	Westinghouse	3.0
M. P. Hinchey, 2948 N. 47th Ave.	Fairbanks-Morse	3.33
W. M. Jeffers, 3030 S. 56th	Kelvinator	5.33
Kelvin Home, 2047 N. 54th	Kelvinator	0.75
Milton Livingston, 303 N. 54th	Frigidaire	3.33
L. R. Louis, 6006 Martha	[illegible]	[illegible]
J. W. Madden, 123 S. Elmwood	General Electric	1.33
Dr. R. A. Penny, 4614 N. 30th	Frigidaire	3.66
A. C. Potter, 407 N. Elmwood	Baker-Trane	3.0
G. Rasmussen, 116 S. 50th Ave.	Frigidaire	0.75
Voyle D. Rector, 671 N. 56th	Baker-Trane	6.0
Carl Swanson, 651 N. 57th	General Electric	5.75
R. F. Winegar, 3340 N. 48th Ave.	Airtemp	3.33
Restaurants, Etc.		
Berry's Restaurant, 313 S. 17th	Carrier	5.25
Boston Grill, 319 S. 16th	Airtemp	14.0
Cantoni Restaurant, 723 S. 16th	Carrier	7.5
Chez Paree, 2402 E. Locust	Frigidaire	17.33
Flying Trapeze, 1607 Jackson	Frigidaire	3.0
Italian Gardens, 1228 S. Sixth	Carrier	5.25
Kerns Cafe, 419 Broadway, Council Bluffs	General Electric	3.25
Mac's Corner Cafe, 19th & Douglas	Baker-Trane	8.5
Mondos Bar, 1706 Douglas	Carrier	8.0
Oak Bar, 1324 Douglas	Frigidaire	8.66
Old English Inn, 50th & Dodge	York	12.0
Paris Bar, 14th & Douglas	Carrier	8.0
The Port, 1202 Farnam	Frigidaire	10.0
Wroth's Cafe, 311 S. 17th	Brunner	5.33
Stores		
Assman Clothing Co., 312 S. 15th	Airtemp	3.33
Beaton Drug Store, 15th & Farnam	Westinghouse	17.0
Bell Cigar Store, 109 S. 15th	Airtemp	6.66
B & G Hosiery, 300 S. 16th	Baker-Trane	6.0
Bloom-Erickson Co. (cigar), 203 S. 19th	Airtemp	6.66
Brodkey Jewelry Store, 1419 Douglas	Brunner	5.0
Buck's Booterie, Barker Bldg.	General Electric	2.66
Diamond Cigar Store, 514 S. 14th	Frigidaire	11.33
Kindy Optical Co., 107 S. 16th	Lipman	5.0
Malashock Jewelry, 303 S. 16th	Frigidaire	3.33
Metropolitan Drug Co., 15th & Farnam	Frigidaire	54.5
Neisner's, 16th & Farnam	Baker	100.0
Sample Fur, 1519 Farnam	Frigidaire	3.0
Silk Shop, Inc., 203 S. 15th	Frigidaire	5.75
Sportsman Cigar Store, 2008 Farnam	Baker-Trane	12.0
Walgreen Drug, 4902 Dodge	Baker-Trane	18.0
Theaters		
Arbor, 2814 Leavenworth	Brunner	26.75
Avenue, 2819 Leavenworth	Brunner	52.0
Corby, 2800 N. 16th	Baker-Trane	48.75
Military, 2216 Military	York	76.0
Minne Lusa, 6718 N. 30th		6.5
North Star, 2417 Ames		10.5
Winn, 4006½ Hamilton	Brunner	20.0
Total		1,421.12



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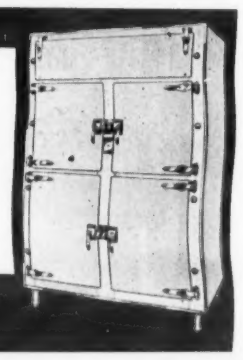

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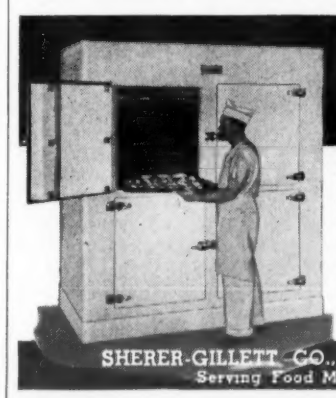

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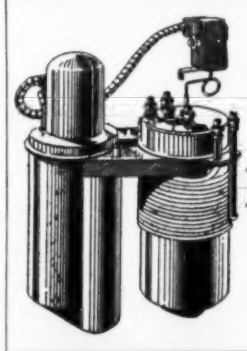

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